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AUTHOR Goldhor, Herbert  
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## ABSTRACT

This study was conducted in 1978/79 to test the hypothesis that the circulation of books put in a prominent display location would increase because of the tendency of adults to select books in public libraries by browsing, rather than looking for specific titles. The circulation of all copies of a sample of 115 titles from the adult individual biography section was recorded for a 3-month period, and each patron returning a sample title was asked to complete a brief questionnaire. In the following three months, 55 titles from the sample were assigned to Group A and displayed on special shelves near the charge desk. Thirty titles designated as Group B were described in a one-page booklist which was widely distributed, and the remaining 30 titles served as a control group. These two groups remained in their normal places on the shelves. Circulation data and user questionnaires were collected for all three groups. Data analyses showed a statistically significant increase in the circulation of Group A during the experimental period; however, an unexpected increase in circulation for Group B resulted in a revised hypothesis to account for additional factors affecting circulation. Extensive data analyses, the questionnaire, and a list of sample titles are included. (BBM)

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WHAT INFLUENCES PUBLIC LIBRARY ADULT PATRONS  
TO CHOOSE THE BOOKS THEY BORROW

by Herbert Goldhor  
Library Research Center  
Graduate School of Library Science  
University of Illinois, Urbana, IL 61801

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In 1970 a study was done in the public libraries of Champaign and Urbana, IL, which found that adult patrons borrowed copies of 110 selected titles significantly more often when these books were in a prime display location than when they were in their regular places on the shelves. The general thesis of that study was that "public library circulation . . . will vary directly with each aspect or combination of aspects which induce or encourage browsing" (1). Whatever leads to browsing will result in increased circulation, whatever militates against or inhibits browsing will result in less circulation, and whatever has no connection with or effect on browsing will result in no change in circulation. What follows here is the report of a second experiment on this general theme, in part replicating the 1970 study in Champaign-Urbana and in part going beyond it.

This second study was done in 1978/79 in the Kingston and St. Andrew Parish Library of the Jamaica Library Service (2), and thus tests the findings of the first study almost ten years later, in another library, and in another country and culture. The Jamaica Library Service began operations in 1948 and in 30 years covered the country with a network of 455 service outlets for just over two million people in an area of 4400 square miles (about 10% smaller in size than Connecticut) (3). Kingston is the capital of Jamaica, with over 600,000 people in the metropolitan area, and the Kingston and St. Andrew Parish Library is naturally the single largest unit of the Jamaica Library Service, with 35 service points including the main library (hereafter referred to as KSAPL), branches, book centers, and bookmobile stops. KSAPL service first began in 1955; its own building was erected in 1958, and an extension again as large was built in 1973. By December 1978, KSAPL had 100,905 volumes of which 75,786 (75%) were

adult books and 29,848 (30% of the total) were adult circulating non-fiction; total circulation for home use in 1977/78 was 161,462 of which 90,771 (56%) were loans of adult books and 29,329 (18% of the total) were of adult non-fiction (4).

Sec. 1. Arrangements for the Experiment.

It was agreed with the head of the Parish Library that the experiment reported here would be done in the area of adult individual biographies (classified in KSAPL in 920 plus the first three letters of the last name of the biographee), as a subject area of about average popularity. In early October 1978, every other biography title on the shelves was examined and certain data recorded for each copy, including the number of date due stamps for each calendar year. In this library when a date due slip in a book is filled, a new one is added by being pasted along its inner margin, without removing the old one. Only when a book is rebound is this complete circulation record destroyed; 193 books (55% of the total sample) had been rebound. In addition we found 30 other books (8% of the total sample) which were not rebound but in which a filled-up date due slip must have been removed when a new one was added (to judge from the gap between the year of acquisition and the first recorded loan, in the light of the rate of recorded loans per year); in most of these cases, traces of the torn-out slip could be seen. With the advice of senior staff members of KSAPL, we estimate conservatively that rebound books and those with missing date due slips had had an average of 20 more circulations, since they were acquired, than were shown on the existing date due slips (5). Data were recorded for 354 copies (of all available editions, parts, and volumes) of 275 different titles; since it was desired to use in the experiment about 100 titles which had circulated the least in recent years those 115 titles were chosen which had circulated four times or less in the preceding five years. A net sample of 144 volumes (and 115 titles) was used in the experiment (41% of all 354 books examined and 42% of all 275 titles), and included 82 rebound books (57%) and 15 (10%) with missing date due slips.

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For three months (from Monday, Oct. 23, 1978, to Saturday, Jan. 20, 1979), every circulation of all copies of the 115 titles was recorded, and the book card of each such volume borrowed was clipped with a note reminding the desk attendant to give a one-page 8-item questionnaire (see Appendix 3) to the person who returned each such book. Patrons were encouraged to complete the questionnaire on the spot; but if the person returning the book was not the one who read it, he/she was given a stamped self-addressed envelope and asked to give the questionnaire (and envelope) to the person for whom the book was borrowed. In the 1970 study, readers were approached by phone and mail; neither of these methods was likely to be successful in Kingston. The KSAPL director suggested the method which was used; since KSAPL employed the Browne charging system, a patron returning a book had to wait for it to be discharged in order to retrieve his ticket.

The second three months (from Monday, Jan. 22, to Saturday, April 21, 1979) constituted the experimental period. In this period, 55 of the titles (48% of the 115), designated Group A, were put on special shelves not far from the charge desk, and under a sign, "Good Books You May Have Missed" (6). When any of the 144 copies of the 115 titles was borrowed in these three months, a note was clipped to its book card reminding the desk attendant to give out the questionnaire, and (in the case of Group A books) to return the volume to the special display. There were 66 copies (46% of all 144) of the 55 titles in Group A, a ratio of 1.2 to one. Group B consisted of 39 copies (27% of 30 titles (26%), a ratio of 1.3 to one. The titles in Group B were all described briefly in a booklist (one sheet of paper, 8½ x 14", and folded twice), prepared by the investigator and reviewed by a KSAPL staff member; a thousand copies were mimeographed and distributed in various ways within the KSAPL (mostly at the adult loan desk), between Wednesday, Jan. 17, and Saturday, Mar. 31, 1979, or almost to the end of the experimental period. A copy of the booklist appears

here as Appendix 2. All copies of the Group B titles were left in their regular places on the open shelves of the library.

Group C consisted of 39 copies (27%) of another 30 titles (26%), a ratio of 1.3 to one, which were also left on their regular places on the shelves as a control for the other two experimental groups. Titles were assigned to Groups A, B, and C on a random basis, and the complete list of the titles in all three groups appears in Appendix 1. The circulation of every copy of the 115 titles continued to be recorded for the second three-month period, along with the request to borrowers to fill out the questionnaire. Finally, we were able to record the circulation of all A, B, and C books from Monday, April 23, to Saturday, June 30, 1979, thus providing a 10-week post-experimental period in which the books of Group A were all returned to their regular places on the shelves along with those of Group B and Group C.

The months used for the control and experimental periods were chosen because of the investigator's scheduled stay in Jamaica, but there is no reason to believe that they were unusual or atypical. In a detailed analysis of April 1977-April 1978 circulation data of KSAPL, the percentage of total annual circulation in November through January was 24%, and in February through April 26% (7). We compared the circulation in four successively smaller categories between Oct. 22-Jan. 21 in 1977/78 and Oct. 23-Jan. 20 in 1978/79, and between Jan. 23-April 21 in 1978 and Jan. 22-April 21 in 1979, with the results shown in Table 1 here. In 1977/78, the two three-month time periods show mixed changes in circulation (from -3% to +3%); in the same two periods of 1978/79, all changes are positive (from 2% to 14%). If we delete the increases in circulation in the experimental period in 1979 for the books in Groups A and B, the percentage increases are 1% to 6%.

The second set of comparisons (Part B of Table 1) show that the 3-month control period in 1978/79 had decreases in circulation in all four categories (from

Table 1. Comparisons Between the Control and Experimental Periods in 1977/78 and in 1978/79, in Four Categories of KSAPL Circulation.

| (a)<br>Time<br>Period                                                           | (b)<br>Total<br>KSAPL<br>Circulation | (c)<br>Total<br>Adult<br>Circulation | (d)<br>Adult<br>Non-Fiction<br>Circulation | (e)<br>Circulation<br>in 900-999<br>(inclgd. biog.) | (f)<br>Circ. in 900's as %<br>of Total KSAPL<br>Circulation (e/b) |
|---------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------|
| <u>Part A. Comparisons Between the Control and Experimental Periods.</u>        |                                      |                                      |                                            |                                                     |                                                                   |
| 1. 10/22/77-1/21/78                                                             | 38,931                               | 22,697                               | 7508                                       | 1944                                                | 5.0%                                                              |
| 2. 1/23/78-4/21/78                                                              | 40,122                               | 22,087                               | 7544                                       | 1897                                                | 4.7%                                                              |
| Difference                                                                      | 1,191                                | -610                                 | 36                                         | -47                                                 | -0.3%                                                             |
| % of line 1                                                                     | 3.1%                                 | -2.7%                                | 0.5%                                       | -2.4%                                               | -0.06%                                                            |
| 3. 10/23/78-1/20/79                                                             | 35,373                               | 19,266                               | 5983                                       | 1585                                                | 4.5%                                                              |
| 4. 1/22/79-4/21/79                                                              | 35,990                               | 19,584                               | 6200                                       | 1812                                                | 5.0%                                                              |
| Difference                                                                      | 617                                  | 318                                  | 217                                        | 227                                                 | 0.5%                                                              |
| % of line 3                                                                     | 1.7%                                 | 1.7%                                 | 3.6%                                       | 14.3%                                               | 0.11%                                                             |
| Difference after removing 124 circulations arising from experimental treatments |                                      |                                      |                                            |                                                     |                                                                   |
|                                                                                 | 493                                  | 194                                  | 93                                         | 103                                                 | 4.7%/0.2%                                                         |
| % of line 3                                                                     | 1.4%                                 | 1.0%                                 | 1.6%                                       | 6.5%                                                | 0.04%                                                             |
| <u>Part B. Comparisons Between 1977/78 and 1978/79.</u>                         |                                      |                                      |                                            |                                                     |                                                                   |
| 5. 10/22/77-1/21/78                                                             | 38,931                               | 22,697                               | 7508                                       | 1944                                                | 5.0%                                                              |
| 6. 10/23/78-1/20/79                                                             | 35,373                               | 19,266                               | 5983                                       | 1585                                                | 4.5%                                                              |
| Difference                                                                      | -3,558                               | -3,431                               | -1525                                      | -359                                                | 0.5%                                                              |
| % of line 5                                                                     | -9.1%                                | -15.1%                               | -20.3%                                     | -18.5%                                              | 0.1%                                                              |
| 7. 1/23/78-4/21/78                                                              | 40,122                               | 22,087                               | 7544                                       | 1897                                                | 4.7%                                                              |
| 8. 1/22/79-4/21/79                                                              | 35,990                               | 19,584                               | 6200                                       | 1812                                                | 5.0%                                                              |
| Difference                                                                      | -4,132                               | -2,503                               | -1344                                      | -85                                                 | -0.3%                                                             |
| % of line 7                                                                     | -10.3%                               | -11.3%                               | -17.8%                                     | -4.5%                                               | -0.06%                                                            |
| Difference after removing 124 circulations arising from experimental treatments |                                      |                                      |                                            |                                                     |                                                                   |
|                                                                                 | -4,256                               | -2,607                               | -1468                                      | -209                                                | 4.7%/0                                                            |
| % of line 7                                                                     | -10.6%                               | -11.9%                               | -19.5%                                     | -11.0%                                              | 0                                                                 |

9% to 20%) from 1977/78, and that the 3-month experimental period in 1979 also had decreases in all categories (from 4% to 18%) from 1978. And if we deduct the increase in circulation arising from the two experimental treatments, the decreases of the later 3 months from the earlier 3-months would be 11% to 20%, or very much the same as in the control period.

It was expected that selection by patrons of the books in Group A browsing would be facilitated by their being placed in a prime display location, and that their rate of circulation in the experimental period would be significantly greater than in the pre-experimental period, and greater than that of the control titles in Group C in the second three months. It was further predicted that the books in Group B would not circulate at a greater rate in the second three months than in the first, or at a greater rate than that of the control titles in Group C in the experimental period. The basis for this reasoning is that a booklist does not facilitate (or hinder) browsing; it is unrelated to browsing and therefore, by the terms of our guiding hypothesis, should have no significant effect on the circulation of the books on the list.

To browse is defined by the American Heritage Dictionary (1969) as "to inspect in a leisurely and casual way . . . to look through or over casually," and by Webster's Third New International Dictionary (1969) as "to look over books (as in a store or library), especially in order to decide what one wants to buy, borrow, or read . . . to make an examination without real knowledge or purpose." A more precise definition is given by Buckland: browsing is "informal searching which is low on document specificity but might be at any level of information specificity" (8), and in another place he defines it as "more or less purposeful searching but not for specific titles" (9). In this study browsing is defined as the casual examination of books at random to find something to borrow and read, with no purposive search for a specific title or a particular class of books. The distinguishing element of browsing as a method of selecting

books is that the reader comes to the library without having in mind one or more specific titles which he/she hopes to find and borrow, or even a specific class of books from which he/she will choose some. As a consequence the reader is open to influence from a variety of factors (including chance) in the library.

## Sec. 2. Comparability of the Samples.

The first question is whether or not the books in Groups A, B, and C were essentially comparable before the experiment began, within the limits of sampling error. Table 2 summarizes the relevant data. Of the 17 indicators in Table 2, all show that Groups A, B, and C differed from each other by no more than can be explained by sampling fluctuations (using .05 as the maximum probability value to be ascribed to chance) (10). In the case of three indicators (nos. 8, 9, and 10), the probability that the differences found between the three groups might have occurred by chance alone is very close to the 5% level; in two of the three cases, the presumed disadvantage of more pages and fewer illustrations occurs in Group A. We conclude that in general the books in Groups A, B, and C had essentially the same characteristics.

Column (h) of Table 2 shows whether or not the combined total of Groups A, B, and C was typical of the rest of the gross sample of adult biographies drawn from the shelves. In 11 indicators the two sets of books differ by no more than chance fluctuations would permit. In six cases, however, the combined total of Groups A, B, and C differs significantly from the rest of the gross sample; three of these indicators concern previous circulation, two deal with publication date, and the sixth concerns the number of books with and without plastic jackets. Each of these six indicators is a reflection (directly or indirectly) of the fact that the 115 titles in Groups A, B, and C were consciously selected from the gross sample because they had circulated less frequently in the years 1974-78. This basis for choosing the books for the experiment increases the internal validity of the study: if the experiment succeeds with books which had circulated less well in the previous few years, it would presumably succeed as

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Table 2. Comparisons on Indicated Measures Between the Books in Groups A, B, and C, and with the Rest of the Total Sample.

| (a)                                                           | (b)              | (c)             | (d)             | (e)                                          | (f)                     | (g)                                 | (h)                                          | (i)                    |
|---------------------------------------------------------------|------------------|-----------------|-----------------|----------------------------------------------|-------------------------|-------------------------------------|----------------------------------------------|------------------------|
| <u>Indicator</u>                                              | <u>Group A</u>   | <u>Group B</u>  | <u>Group C</u>  | <u>Significance<br/>of Dif-<br/>ferences</u> | <u>Groups<br/>A+B+C</u> | <u>Rest of<br/>Total<br/>Sample</u> | <u>Significance<br/>of Dif-<br/>ferences</u> | <u>Grand<br/>Total</u> |
| a. Number of Copies                                           | 66/46%           | 39/27%          | 39/27%          | --                                           | 144/100%<br>41%         | 210/59%                             | --                                           | 354/100%               |
| b. Number of Titles                                           | 55/48%           | 30/26%          | 30/26%          | --                                           | 115/100%<br>42%         | 160/58%                             | --                                           | 275/100%               |
| 1. Number of Titles, and<br>Number of Added Copies            | 55/83%<br>11/17% | 30/77%<br>9/23% | 30/77%<br>9/23% | ns                                           | 115/80%<br>29/20%       | 160/76%<br>50/24%                   | ns                                           | 275/78%<br>79/22%      |
| 2. Mean Total Recorded Circulation per Book per Year: 1958-78 | 0.6              | 0.6             | 0.6             | ns                                           | 0.6                     | 2.3                                 | .001                                         | 1.7                    |
| 3. Mean Total Recorded Circulation per Book per Year: 1974-78 | 0.6              | 0.6             | 0.6             | ns                                           | 0.6                     | 2.2                                 | .001                                         | 1.5                    |
| 4. Mean Total Recorded Circulation per Book: 1978             | 0.5              | 0.5             | 0.8             | ns                                           | 0.7                     | 2.1                                 | .001                                         | 1.5                    |
| 5. Mean Average Year of Acquisition                           | 1964.6           | 1963.9          | 1963.2          | ns                                           | 1964.0                  | 1966.6                              | ns                                           | 1965.6                 |
| 6. Mean Average Year of Publication of Copies                 | 1957.5           | 1959.8          | 1958.3          | ns                                           | 1958.3                  | 1962.1                              | .001                                         | 1960.5                 |
| 7. Mean Average Year of Original Publication of Titles        | 1953.2           | 1957.8          | 1953.6          | ns                                           | 1954.5                  | 1958.9                              | .009                                         | 1957.1                 |
| 8. Mean Average Number of Pages                               | 333              | 268             | 294             | ns/.07                                       | 305                     | 305                                 | ns                                           | 305                    |
| 9. Mean Average Number of Illustrations                       | 9.0              | 16.3            | 10.7            | ns/.06                                       | 11.4                    | 14.6                                | ns/.06                                       | 13.3                   |

Table 2. (Cont.) Comparisons on Indicated Measures Between the Books in Groups A, B, and C, and with the Rest of the Total Sample.

| (a)                                                           | (b)                                                                          | (c)              | (d)              | (e)                                 | (f)               | (g)                        | (h)                                 | (i)                |
|---------------------------------------------------------------|------------------------------------------------------------------------------|------------------|------------------|-------------------------------------|-------------------|----------------------------|-------------------------------------|--------------------|
| Indicator                                                     | Group A                                                                      | Group B          | Group C          | Significance<br>of Dif-<br>ferences | Groups<br>A+B+C   | Rest of<br>Total<br>Sample | Significance<br>of Dif-<br>ferences | Grand<br>Total     |
| 10. Country of Publication:<br>UK vs. US & Elsewhere          | 58/88%<br>8/12%                                                              | 32/82%<br>7/18%  | 27/69%<br>12/31% | ns/.06                              | 117/81%<br>27/19% | 173/82%<br>37/18%          | ns                                  | 290/82%<br>64/18%  |
| 11. Physical Condition: Good<br>vs. Fair or Poor              | 43/65%<br>23/35%                                                             | 29/74%<br>10/26% | 26/67%<br>13/33% | ns                                  | 98/68%<br>46/32%  | 148/70%<br>62/30%          | ns                                  | 246/69%<br>108/31% |
| 12. With and Without Plastic<br>Book Jackets                  | 14/21%<br>52/79%                                                             | 8/20%<br>31/80%  | 9/23%<br>30/77%  | ns                                  | 31/22%<br>113/78% | 67/32%<br>143/68%          | .02                                 | 98/28%<br>256/72%  |
| 13. Books Rebound or With Missing Date Due Slips              |                                                                              |                  |                  |                                     |                   |                            |                                     |                    |
| Yes                                                           | 45/68%                                                                       | 28/72%           | 24/62%           |                                     | 97/67%            | 126/60%                    |                                     | 223/63%            |
| No                                                            | 21/32%                                                                       | 11/28%           | 15/38%           | ns                                  | 47/33%            | 84/40%                     | ns                                  | 131/37%            |
| 14. Books Bought, or<br>Received as Gifts                     | 53/80%<br>13/20%                                                             | 32/82%<br>7/18%  | 32/82%<br>7/18%  | ns                                  | 117/81%<br>27/19% | 162/77%<br>48/23%          | ns                                  | 279/79%<br>75/21%  |
| 15. Estimate of Quality:                                      | (a) Distribution of Number of Titles by Four Groups of Book Evaluation Tools |                  |                  |                                     |                   |                            |                                     |                    |
| 0 Tools                                                       | 7/13%                                                                        | 2/7%             | 4/13%            |                                     | 13/11%            | 13/8%                      |                                     | 26/10%             |
| 1-2 Tools                                                     | 14/25%                                                                       | 10/33%           | 6/20%            |                                     | 30/26%            | 48/30%                     |                                     | 78/27%             |
| 3-5 Tools                                                     | 16/29%                                                                       | 12/40%           | 13/43%           |                                     | 41/36%            | 50/31%                     |                                     | 91/33%             |
| 6 or More Tools                                               | 18/33%                                                                       | 6/20%            | 7/23%            |                                     | 31/27%            | 49/31%                     |                                     | 80/29%             |
| Total                                                         | 55/100%                                                                      | 30/100%          | 30/99%           | ns                                  | 115/100%          | 160/100%                   | ns                                  | 275/99%            |
| 15(b). Mean Average Number of Book Evaluation Tools per Title | 4.2                                                                          | 3.8              | 4.1              | ns                                  | 4.1               | 4.0                        | ns                                  | 4.0                |
| 15(c). Mean Average Number of Tools per Copy                  | 4.8                                                                          | 3.9              | 5.2              | ns                                  | 4.7               | 4.2                        | ns                                  | 4.4                |

Notes: Column (e) is the significance of differences between Group A, Group B, and Group C; Column (h) is the significance of differences between Groups A+B+C and the rest of the total sample. In both columns, "ns" means not significant at the .05 level. In lines (a) and (b), the percentages add across to 100; in lines 1-15, they add down to 100. Indicators 2 and 4 were calculated by dividing total recorded circulation by the sum of the number of years these books were available for loan and their circulation was known. Indicator 3 was calculated by using only those books which were available all five years and whose circulation is known for all five years. Column (e) of Indicator 15(a) was found by testing Group A against Groups B+C. Indicator 7 excludes 9 books originally published before 1880.

well or better with books of greater popularity in recent years. But it tends to lower the external validity, since the books in Groups A, B, and C are not a random sub-set of the gross sample (let alone of any larger population); we cannot safely extrapolate the results of this study to larger groupings of books or libraries. There is no question but that internal validity must come first, and external validity second.

To secure a measure of the quality of the 273 titles in the total sample, we applied the inductive method of evaluation (11). This method assumes that what is meant by a "good" book is that it has been approved and recommended by critics, reviewers, compilers of book lists, and editors of retrospective bibliographies. We checked these titles in 18 book evaluation tools, and the results ranged from some titles in none of these tools to some in as many as 15 (12). "Quality" of a book hereafter means the number of such tools in which it was found listed and involves no subjective estimate of the content of the work.

Since we were particularly interested in the effect of the quality of these books on the experiment, we used analysis of variance to test the distribution of the loans of those books which were found in each possible number of book evaluation tools (zero to 15), using (a) total recorded circulation, (b) total estimated circulation, (c) recorded loans in 1974-78, and (d) recorded loans in 1978. For Group A titles alone, for titles and for all books in Groups A, B and C combined, and for Group D books alone, there were in all 16 sets of calculations of which only two were significant and both at the .04 level. The books in Groups A, B and C which were found in fewer tools had more total estimated loans (about 22 per book) than those books found in a larger number of tools (about 22 per book) than those books found in a larger number of tools (about 18); and the books in Group D which were found in fewer tools also had more loans in 1974-78 (about 12 each) than did those books found in a larger

number of tools (about 10). In both these two cases, quality and loans are inversely related.

### Sec. 3. Results of The Experiment.

Table 3 shows in brief compass the number of loans for each of the three groups of books in the pre-experimental period of 13 weeks (Term 1), in the experimental period of 13 weeks (Term 2), and in the post-experimental period of 10 weeks (Term 3). We shall discuss the post-experimental period in a later section of this report.

The differences between the numbers of loans of books in Groups A, B, and C, in Term 1, are no greater than might be expected because of sampling variability ( $X^2=3.18$ , 2 df,  $p=.20$ ) (13). There was a major increase of 712% in Group A circulation from Term 1 to Term 2, as predicted; but there was also an increase of 450% in Group B, which was not predicted; Group C circulation did not increase, as predicted (and in fact declined by 10%). The question is whether the distribution of numbers in columns (b) and (c) of Table 3 is such as might arise by chance alone; the chi-square value is 22.1, 2 df, and  $p$  is less than .001, and thus the answer is no. Group A is a much larger percentage of total loans in Term 2 than in Term 1, and Group C is definitely smaller. When we compare Groups A and B in Terms 1 and 2,  $X^2=1.51$ , 1 df,  $p=.22$ ; when we compare Groups B and C,  $X^2=9.5$ , 1 df,  $p$  is less than .01. In other words, the differences between Groups A and B in Terms 1 and 2 are not significant, while those between B and C (and between A and C) are. Both experimental variables - the display of Group A books, and the distribution of a list of the Group B books - resulted in increases of circulation of seven and four times respectively, while the number of circulations of the books in the control group stayed essentially the same.

What other possible influences might have caused these changes in circulation? We saw in Table 2 that the books in all three groups were acquired on the average about the same time, were published on the average in the same

Table 3. Number of Circulations in Each of Three Terms of the Books in Groups A, B, and C.

| (a)          | (b)           | (c)           | (d)                   | (e)           | (f)          |
|--------------|---------------|---------------|-----------------------|---------------|--------------|
| <u>Group</u> | <u>Term 1</u> | <u>Term 2</u> | <u>Sub-<br/>Total</u> | <u>Term 3</u> | <u>Total</u> |
| A            | 16 (47%)      | 114 (72%)     | 130 (67%)             | 20 (67%)      | 150 (67%)    |
| B            | 8 (24%)       | 36 (23%)      | 44 (23%)              | 4 (13%)       | 48 (22%)     |
| C            | 10 (29%)      | 9 (6%)        | 19 (10%)              | 6 (20%)       | 25 (11%)     |
| Total        | 34 (100%)     | 159 (100%)    | 193 (100%)            | 30 (100%)     | 223 (100%)   |

years, had varying numbers of pages and of illustrations but not beyond the limits of chance (and if anything the Group A books were longer and had fewer illustrations than those in Groups B or C), were in about the same physical condition, and had about the same percentage of plastic book jackets and of gifts. Finally the books in the three groups are of about the same quality, as measured by the number of titles in four groupings of tools and by the mean average number of tools per title and per copy.

We compared the books which were borrowed from each of the three groups (A, B, and C), separately for each of the three terms, in regard to each of 11 characteristics (number of pages, number of illustrations, year of acquisition, year of publication, physical condition of the book, whether or not it had a plastic cover and book jacket, whether it was bought or received as a gift, the country in which it was published, whether or not it was rebound, its total recorded circulation, and the number of book evaluation tools in which it was found listed). Of the 33 applications of analysis of variance, only one was significant ( $p=.008$ ), and that was in Term 1 in regard to the country of publication. The books in Groups A, B, and C which were borrowed were successively more likely to be from the US than from England; but the numbers involved are small, and when we test as many as 33 relationships one or more may be statistically significant by chance alone. We conclude that, as far as we can tell, the books borrowed in each term from each group were essentially similar.

We sought to detect any differences between the books borrowed in Terms 1 or 3 and those borrowed in Term 2, separately for Group A and for Group B; the results are shown in Table 4. None of the differences are statistically significant. In both pairs of comparison, the books borrowed in the experimental period tended on the average to be a little older than in the pre- or post-experimental periods, to have more pages, to be more often in good condition, and to be measurably more often those without book jackets. In two respects,

Table 4. Differences Between Books Borrowed in Terms 1 or 3 and in Term 2, from Group A and Group B, on Selected Variables.

| Variable                                                                    | Group A   |        | Group B   |        |
|-----------------------------------------------------------------------------|-----------|--------|-----------|--------|
|                                                                             | Terms 1/3 | Term 2 | Terms 1/3 | Term 2 |
| 1. Year of Acquisition                                                      | 1966.3    | 1965.1 | 1964.7    | 1963.4 |
| 2. Year of Publication                                                      | 1959.4    | 1957.8 | 1961.7    | 1959.3 |
| 3. Number of Pages                                                          | 316       | 327    | 251       | 271    |
| 4. Number of Illustrations                                                  | 10.0      | 9.7    | 7.2       | 11.1   |
| 5. Percent in Good Physical Condition                                       | 64%       | 66%    | 70%       | 74%    |
| 6. Percent without Book Jacket                                              | 64%       | 76%    | 60%       | 74%    |
| 7. Average Number of Book Evaluation Tools in which these Books Were Listed | 4.2       | 4.5    | 4.2       | 4.1    |
| 8. Number of Books                                                          | 25        | 55     | 10        | 27     |

Group A and Group B books differed from each other. First, Group A books borrowed in Term 2 had slightly fewer illustrations than did Group A books borrowed in Terms 1 or 3, while Group B books in Term 2 had more than a 50% increase in the number of illustrations over those in Terms 1 or 3. Second, Group A books in Term 2 were found in a slightly higher number of book evaluation tools; Group B books in Term 2 were listed in slightly fewer tools. We can find no clue in these variables to explain the changes in circulation in Term 2.

From the earlier study of the effect of prime display location (1), we have reworked the original data on 110 standard titles (half fiction and half non-fiction); see Appendix 5. We divided those books into three classes, viz., those which had no loans in either the pre-experimental or experimental periods, those with no more than twice as many loans in the second period as in the first, and those with more than twice as many loans in the second period as in the first. We applied the chi-square test to these three classes

of books in two six-month periods with regard to the values for each (and for combinations) of 15 variables, e.g., the number of best-sellers in fiction and in non-fiction, the number of fiction - and non-fiction - titles with fewer than the median number of pages, the number of fiction - and non-fiction - titles whose date of original publication was more recent than the median date of all the titles, etc. The only significant differences came in those variables which compared fiction and non-fiction titles; the fiction titles were consistently more popular.

Of course we have no fiction titles in this present study, but the above findings do suggest that there may be a qualitative factor in certain non-fiction books in the present study which makes them appeal more to the patrons of public libraries than is true of other non-fiction titles which lack this quality. It may include readability, legibility, and emphasis on interesting developments in the lives of the subjects, and a de-emphasis on footnotes and on lengthy discussions of background developments. If we could formalize such a description of the more popular type of biography and apply it to this set of titles, we might find that those with this X variable circulated more frequently than those without it, and that the resulting tables of data are as persuasive or more persuasive than what we have found in this study based on the experimental treatments, prime display and a booklist. Other than this possible distinction between books which are and are not the "public library type," the results of the secondary analysis of the 1970 study data confirm our present findings that no one or group of obvious characteristics of the books in question separate them in accordance with the way their circulation increased from Term 1 to Term 2.

One piece of information we have about each of the 223 loans, is the sex of the borrower; more precisely, what we know is the sex of the person whose card was used to borrow the book. For 222 loans (for one loan the sex of the borrower was not recorded), 96 (43%) were made by men and 126 (57%) by

women; the differences in the distribution of borrowers by sex are consistently such as might arise by chance alone, as follows

between Group A in each of the three terms ( $X^2=1.53$ , 2df,  $p=.50$ ),  
between Group B in Terms 1 and 3 and in Term 2 ( $X^2=0.06$ , 1 df,  $p=.80$ ),  
between Group C in Terms 1 and 3 and in Term 2 ( $X^2=0.29$ , 1 df,  $p=.60$ ),  
between Term 1, Term 2, and Term 3 for all three groups combined  
( $X^2=p.14$ , 2 df,  $p=.95$ ),  
between Group A and Groups B and C in Term 1 ( $X^2=0.45$ , 1 df,  $p=.50$ ),  
between the three groups in the experimental period ( $X^2=0.47$ , 2 df,  
 $p=.80$ ),  
between Group A and Groups B and C combined, in the post-experimental  
period ( $X^2=0.42$ , 1 df,  $p=.50$ ), and  
between the three groups in all three terms combined ( $X^2=1.99$ , 2 df,  
 $p=.38$ ).

#### Sec. 4. Analysis of the Patron Questionnaires.

There is another pool of data we need to examine to see if they throw any light on the raw circulation numbers shown in Table 3. This pool consists of the questionnaires which readers were asked to fill out when they returned any of the books in Groups A, B, and C in the six months of the pre-experimental and experimental periods. (A copy of the questionnaire constitutes Appendix 3 here.) We did not seek such questionnaires for books borrowed in the post-experimental period, but we received three such and we include them in our analysis. Table 5 shows the number of questionnaires received in each term and for each group of books, as well as the number of loans for which we did not get a questionnaire. The 97 questionnaires are 43% of all 223 loans, and the 94 questionnaires received for loans in Terms 1 and 2 are 49% of all loans in those two periods.

We shall look first at whether these 97 questionnaires are representative of all 223 loans. Fortunately they are, in several respects. When we apply the

Table 5. Number of Loans for Which Questionnaires Are and Are Not Available for Each of the Three Terms and Sub-Divided by Groups of Books.

| (a)<br>Group | (b)     |         | (c)     |         | (d)    |         | (e)     |          | (f)      |    | (g) |    | (h) |    | (i) | (j)   |
|--------------|---------|---------|---------|---------|--------|---------|---------|----------|----------|----|-----|----|-----|----|-----|-------|
|              |         |         |         |         |        |         |         |          |          |    |     |    |     |    |     |       |
|              | Term 1  |         | Term 2  |         | Term 3 |         | Total   |          | Grand    |    |     |    |     |    |     |       |
|              | Yes     | No      | Yes     | No      | Yes    | No      | Yes     | No       | Yes      | No | Yes | No | Yes | No | Yes | Total |
| A            | 10/48%  | 6/46%   | 56/77%  | 58/67%  | 3/100% | 17/63%  | 69/71%  | 81/64%   | 150/67%  |    |     |    |     |    |     |       |
| B            | 4/19%   | 4/31%   | 14/19%  | 22/26%  | 0      | 4/15%   | 18/19%  | 30/24%   | 48/22%   |    |     |    |     |    |     |       |
| C            | 7/33%   | 3/23%   | 3/4%    | 6/7%    | 0      | 6/22%   | 10/10%  | 15/12%   | 25/11%   |    |     |    |     |    |     |       |
| Total        | 21/100% | 13/100% | 73/100% | 86/100% | 3/100% | 27/100% | 97/100% | 126/100% | 223/100% |    |     |    |     |    |     |       |
| Percent      | 22%     |         | 75%     |         | 3%     |         | 100%    |          |          |    |     |    |     |    |     |       |
| of Total     |         | 10%     |         | 68%     |        | 21%     |         | 99%      |          |    |     |    |     |    |     |       |

chi-square test to the distribution of data in columns (h) and (i) of Table 5,  $\chi^2=1.17$ , 2 df,  $p=.56$ ; the distribution is equally random if we use only Terms 1 and 2 and combine them so as to have no cells with fewer than 5 cases ( $\chi^2=0.93$ , 2 df,  $p=.62$ ). Questionnaires are available for 46% of all loans in Group A in all three terms combined, for 38% of Group B loans, and for 40% of Group C; the comparable figures for Term 1 are 62%, 50%, and 70%, and for Term 2 49%, 39%, and 33%. The differences between the numbers of loans for which we have and do not have questionnaires in Term 1 (between Group A and Groups B & C) and in Term 2 (between Group A, Group B, and Group C) are such as might arise by chance alone, in both cases.

We compared the books for whose loans we have questionnaires with those for whose loans we do not, for all three terms and for all three groups combined, in regard (a) to the average annual number of recorded loans in 1974-78, (b) to the average number of recorded loans in 1978, (c) to the average year of acquisition, (d) to the average year of publication, (e) to the average number of pages, (f) to the average number of illustrations, (g) to the distribution of titles by the mean average number of book evaluation tools in which they were found listed, (h) to their average physical condition, and (i) to whether or not they had book jackets. In eight of these nine cases, the differences are no greater than can

be expected from sampling variations; only in regard to the year of acquisition is there a significant difference ( $p=.02$ ), and those for which we have questionnaires were acquired later on the average than the others. Furthermore we know the sex of the borrower of each book (but one); when we compared the number of men and the number of women whose cards were used to borrow these 222 books, in regard to those loans for which we have questionnaires and those for which we do not (see Table 6), we find that the differences are not significant.

Table 6. Comparison in Regard to Sex of Those Borrowers for Whose Loans Questionnaires Were or Were Not Completed.

| (a)<br><u>Sex</u> | (b)<br><u>Questionnaires<br/>Completed</u> | (c)<br><u>Questionnaires<br/>Not Completed</u> | (d)<br><u>Total</u> |
|-------------------|--------------------------------------------|------------------------------------------------|---------------------|
| Male              | 47 (48%)                                   | 49 (39%)                                       | 96 (43%)            |
| Female            | 50 (52%)                                   | 76 (61%)                                       | 126 (57%)           |
| Total             | 97(100%)                                   | 125(100%)                                      | 222(100%)           |

$$(X^2=1.55, 1 \text{ df}, p=.20)$$

We can then have some confidence that the 97 questionnaires are representative of the total group of 223 loans. Since we knew the date each book was borrowed and the date each questionnaire was received (14), we could calculate the number of days these books were kept out on loan. The average was 29, or twice as long as the official loan period; the range was from 4 to over 99 days; the 95% confidence interval of the mean is from 25 to 33. In part this high average length of actual loan occurred because the overdue fine was low (2¢ a week to a maximum of 50¢ per book). The average number of days Group A books were kept out was 29, Group B 26, and Group C 30; the differences between these three are not significant, nor that between the average of Group A books in Term 1 (31.8) and in Term 2 (28.5), of Group B books in Term 1 (20.8) and in Term 2 (29.4), or of all books borrowed in Term 1 and for which we have data (31.2) and in Term 2 (27.8). The number of days books were kept has no correlation with the

number of book evaluation tools in which they were found listed: for all 97 books for which we have questionnaires, the Pearson product-moment coefficient of correlation is .07, and for the 56 books in Group A and borrowed in Term 2 number of book evaluation tools in which they were found listed: for all 97 books for which we have questionnaires, the Pearson product-moment coefficient of correlation is .07, and for the 56 books in Group A and borrowed in Term 2 it is .01.

We will look next at whether the information from the 97 completed questionnaires suggests any difference between the three groups of books, and particularly between the situation in Term 1 and in Term 2. We asked first if the respondent had borrowed this book for himself/herself. All but one of the 95 persons who answered this question said yes; this is markedly different from the negative response by 14% of the 718 respondents in the earlier study and of similar and higher percentages in several other studies (15). Partial verification of the responses to this first question is provided when we compare the sex of the person whose card was used to make the loan and the sex of the person who answered the questionnaire (see Table 7); the differences are such as could arise by chance.

Table 7. Comparison Between Sex of Borrower and Sex of Respondent for Those Loans for Which Questionnaires Were Secured.

| (a)<br><u>Sex</u> | (b)<br><u>Sex of<br/>Borrower</u> | (c)<br><u>Sex of<br/>Respondent</u> |
|-------------------|-----------------------------------|-------------------------------------|
| Male              | 46 (48%)                          | 50 (53%)                            |
| Female            | 49 (52%)                          | 45 (47%)                            |
| Total             | 95(100%)                          | 95(100%)                            |

$$(X^2=0.21, 1 \text{ df}, p=.65)$$

When asked how much of the book they had read, three people (3%) said none, 19 (20%) less than half, 11 (12%) more than half, and 63 (66%) said all. These percentages correspond to those found (a) in the 1970 study in Champaign-Urbana, viz., 10%, 27%, 11%, and 52%, and (b) in a 1980 study of 557 patrons in four

Illinois public libraries (16). Because of the small numbers in many of the 12 cells of a table analyzing each of three groups of books by four amounts of the book read, we compared the three groups by those who said they read all the book and those who read less than all (see Table 8), and found no significant differences.

Similarly we compared all three groups combined in Terms 1 and 3 together and in Term 2, by those who read less than half of the books they borrowed and those who read more than half, and found differences no greater than could be explained by chance alone ( $X^2=2.83$ , 1 df,  $p=.10$ ). As a matter of fact, more respondents in the experimental period (82% of 72) said they read half or more of the books they borrowed than did those in the pre- and post-experimental periods (62% of 24 respondents). The average amount read by borrowers of Group A books in Term 1 was significantly less than that reported by borrowers of Group A books in Term 2 (t-test,  $p=.01$ ). The average amount read of Group B books in Term 1 was not significantly different from that reported by borrowers of Group B books in Term 2 (t-test,  $p=.19$ ).

Table 8. Distribution of Respondents by Extent of Book Read, for Each Group Separately and for All Three Terms Combined.

| (a)<br>Extent of<br>Book Read | (b)                      (c)<br>Group |           |           | (d) | (e)          |
|-------------------------------|---------------------------------------|-----------|-----------|-----|--------------|
|                               | <u>A</u>                              | <u>B</u>  | <u>C</u>  |     | <u>Total</u> |
| All                           | 45 (65%)                              | 11 (65%)  | 7 (70%)   |     | 63 (66%)     |
| Less Than All                 | 24 (35%)                              | 6 (35%)   | 3 (30%)   |     | 33 (34%)     |
| Total                         | 69 (100%)                             | 17 (100%) | 10 (100%) |     | 96 (100%)    |

$$(X^2=0, 2 \text{ df}, p=.99)$$

Apparently the two experimental treatments did not result in the books borrowed being read less than in the control period; this was also the experience in the 1970 study (1). In the present study, those who said they read none of the books they borrowed kept them out for an average of 28 days; those who read less than half, 31 days; more than half, 33 days; and all, 27 days. These differences are not significant.

We also asked if the respondent was glad to have borrowed the book; a large majority (77 or 82%) said yes, while 17 persons (18%) said no. The corresponding figures for Groups A and B (for Terms 1 and 2 combined) are shown in Table 9, and all ten respondents who borrowed Group C books said yes. Of the 13 in Group A who said no, 8 borrowed their books in Term 2, the experimental period; all 4 Group B respondents who said no were in Term 2. The differences between Group A and Groups B and C combined, in Term 2, are not significant ( $X^2=0.21$ , 1 df,  $p=.67$ ), nor are differences between all three Groups in Terms 1 and 3 vs. Term 2 ( $X^2=0.70$ , 1 df,  $p=.42$ ). Differences between Group A in Terms 1 and 3 combined and in Term 2 are significant ( $X^2=6.33$ , 1 df,  $p=.01$ ), with a larger percentage in Term 2 saying yes than in Terms 1 and 3 (85% vs. 58%). In the 1970 study, satisfied readers were 82% of the total in the control period, but with no significant change in the experimental period.

Table 9. Distribution of Respondents Who Were or Were Not Glad to Have Borrowed the Book, for Groups A and B Separately and for Terms One and Two Combined.

| (a)<br>Glad to Have<br>Borrowed the Book? | (b)<br>Group |          | (c) | (d)      |
|-------------------------------------------|--------------|----------|-----|----------|
|                                           | A            | B        |     | Total    |
| Yes                                       | 53 (80%)     | 14 (78%) |     | 67 (80%) |
| No                                        | 13 (20%)     | 4 (22%)  |     | 17 (20%) |
| Total                                     | 66(100%)     | 18(100%) |     | 84(100%) |

$$(X^2=0.84, 1 \text{ df}, p=.38)$$

We compared the 17 respondents who said they were not glad to have borrowed the books they did with the 77 who said they were, in regard to sex, occupation, method of selection, 1974-78 recorded circulation of the books in question, the number of pages of those books, the number of book evaluation tools in which they were listed, and the year of acquisition. In no case did analysis of variance yield a significant difference; the closest ( $p=.06$ ) was in regard to year of acquisition, where the mean for those not glad was 1963.9 versus a mean of 1965.7 for those glad.

Of 95 respondents, 41 (43%) said that they knew in advance of their visit to the library what book or sort of book they wished to borrow, and 54 (57%) said they did not. The distribution of frequencies for each of the three groups (over all 8 months) for each of the two responses is random ( $X^2=2.70$ , 2 df,  $p=.27$ ), as is that for Groups A and B ( $X^2=0.86$ , 1 df,  $p=.37$ ), for Term 1 vs. Term 2 for all three groups together ( $X^2=0.04$ , 1 df,  $p=.85$ ), for Group A vs. Groups B and C combined in the experimental period ( $X^2=0.02$ , 1 df,  $p=.90$ ), and for Group A in Terms 1 and 3 vs. Term 2 ( $X^2=0.02$ , 1 df,  $p=.90$ ).

The most important question was how or by what method the respondent chose this book to borrow. We gave several alternatives, and of 93 persons who answered this question, 43 (46%) checked browsing, 20 (22%) said in one way or another that they liked this kind of book, 13 (14%) checked advice of a friend, 6 (7%) a booklist, 4 (4%) school-assignment, 2 (2%) advice of a librarian, and 5 (5%) other answers. We condensed these responses to get the results in Table 10.

Table 10. Distribution of Respondents Who Used Each of Four Main Methods of Selection of the Books Borrowed, for Each Group Separately and for Terms One and Two Combined.

| (a)<br>Method  | (c)<br>Group |          |          | (e)<br>Total |
|----------------|--------------|----------|----------|--------------|
|                | (b)<br>A     | B        | (d)<br>C |              |
| Browsing       | 32 (48%)     | 6 (35%)  | 5 (50%)  | 43 (46%)     |
| Booklist       | --           | 5 (29%)  | 1 (10%)  | 6 (7%)       |
| Like This Kind | 17 (26%)     | 3 (18%)  | -        | 20 (22%)     |
| All Others     | 17 (26%)     | 3 (18%)  | 4 (40%)  | 24 (25%)     |
| Total          | 66(100%)     | 17(100%) | 10(100%) | 93(100%)     |

Browsing was clearly the most popular selection method for choosing books in all three groups, and it becomes overwhelmingly so if we add the responses volunteered in the class "Like This Kind." The questionnaire form (Appendix 3) required that people who said they knew in advance what book or kind of book they wished to borrow had to supply the answer "browsing" (or some clear equivalent) to question 4a. The strange thing is that so few borrowers of Group B books recognized the influence

of the booklist; possibly they ascribed their final choice of book to browsing because they used that method in looking on the shelves for one or more titles on the booklist in their hands.

When we use only two categories (in order to avoid cells with fewer than 5 values), viz., browsing and all other methods, the distribution of differences between Group A, Group B, and Group C over the 8 months is random ( $X^2=1.00$ , 2df,  $p=.60$ ). The distribution is also random between Group A and Group B over all 8 months ( $X^2=0.49$ , 1 df,  $p=.50$ ), between Terms 1 and 3 vs. Term 2 for all three groups combined ( $X^2=0.30$ , 1 df,  $p=.87$ ), between Terms 1 and 3 vs. Term 2 for Group A alone ( $X^2=0.47$ , 1 df,  $p=.50$ ), between Group A vs. Groups B and C in Term 1 alone ( $X^2=0$ , 1 df,  $p=.99$ ) and in Term 2 alone ( $X^2=0.41$ , 1 df,  $p=.50$ ), and between Terms 1 and 3 vs. Term 2 for Groups B and C combined ( $X^2=0.61$ , 1 df,  $p=.45$ ).

We cross-analyzed the reported methods of selection by whether these respondents did or did not know in advance what book or class of books they were looking for when they visited the library and borrowed the book for which we have their completed questionnaires (see Table 11). When we compress the data into four classes, viz., Friend's Recommendation, Browsing, Kind of Book I Like, and All Other, the distribution is significantly different from what would occur by chance alone ( $X^2=27.77$ , 3 df,  $p=.001$ ). In most methods of selection, the data support the respondents' statements as to whether or not they knew in advance what they were looking for.

Table 11. Distribution by Method of Selection of Those Who Said They Did or Did Not Know in Advance What Book They Were Looking for When They Visited the Library.

| (a)              | (b)                    | (c)                             | (d)           | (e)            | (f)                         | (g)           | (h)                  | (i)                       | (j)          | (k)   |
|------------------|------------------------|---------------------------------|---------------|----------------|-----------------------------|---------------|----------------------|---------------------------|--------------|-------|
|                  | Method of Selection    |                                 |               |                |                             |               |                      |                           |              |       |
| Know in Advance? | School Assign-<br>ment | Friend's<br>Recom-<br>mendation | Book-<br>list | Book<br>Review | Advice<br>of Li-<br>brarian | Brows-<br>ing | Card<br>Cat-<br>alog | Kind of<br>Book<br>I Like | All<br>Other | Total |
| Yes              | 4                      | 5                               | 3             | 1              | -                           | 8             | -                    | 18                        | 2            | 41    |
| No               | -                      | 8                               | 2             | -              | 2                           | 35            | 1                    | 2                         | 1            | 51    |
| Total            | 4                      | 13                              | 5             | 1              | 2                           | 43            | 1                    | 20                        | 3            | 92    |

We asked the people who completed these questionnaires to indicate their occupation and their sex. Only 83 persons (86%) indicated their occupation; 11 (13%) were students, 30 (36%) were in the professions (and semi-professions), 4 (5%) were managers or executives, 14 (17%) in clerical or sales work, 7 (8%) were skilled workers, 1 (1%) unskilled, 6 (7%) housewives, 2 (2%) unemployed, and 8 (10%) retired. When we group these data and compare Group A with B and C borrowers, as shown in Table 12, the differences are not significant.

Table 12. Distribution of Respondents (for Each of Two Main Groups of Books) by Main Occupational Classes, for All Terms Combined.

| (a)<br>Class of<br>Occupations | (b) Group                         |          | (d)<br>Total |
|--------------------------------|-----------------------------------|----------|--------------|
|                                | A                                 | B and C  |              |
| Professions                    | 23 (40%)                          | 7 (28%)  | 30 (36%)     |
| All Other Employed<br>Persons  | 17 (29%)                          | 9 (36%)  | 26 (31%)     |
| All Others                     | 18 (31%)                          | 9 (36%)  | 27 (33%)     |
| Total                          | 58(100%)                          | 25(100%) | 83(100%)     |
|                                | $(X^2=0.98, 2 \text{ df}, p=.32)$ |          |              |

Using only two categories of occupations (professions and all others), we found no significant differences in the following comparisons:

between Group A and Groups B and C, in Term 2 ( $X^2=0.01, 1 \text{ df}, p=.90$ ),

between Group A and Groups B and C, in all three terms together  
( $X^2=0.58, 1 \text{ df}, p=.46$ ),

between Group A in Terms 1 and 3 and in Term 2 ( $X^2=0.003, 1 \text{ df}, p=.95$ ).

between Groups B and C combined in Terms 1 and 3 and in Term 2 ( $X^2=1.35, 1 \text{ df}, p=.25$ ), and

between all groups combined in Terms 1 and 3 and in Term 2 ( $X^2=0.56, 1 \text{ df}, p=.47$ ).

We cross-analyzed respondents' occupations by the reported method of selection of the book in question. Of the resulting 10 x 10 matrix, 82 cells have either zero or one; the cells with values of two or more are shown in Table 13.

Table 13. Distribution of Respondents' Occupation, by Method of Selection, When More Than One Case Was Found.

| (a)                 | (b)     | (c)          | (d)           | (e)            | (f)     | (g)       | (h)     | (i)        | (j)         |
|---------------------|---------|--------------|---------------|----------------|---------|-----------|---------|------------|-------------|
| Method of Selection | Student | Professional | Owner/Manager | Clerical/Sales | Skilled | Housewife | Retired | Total Here | Grand Total |
| Recommendation of   |         |              |               |                |         |           |         |            |             |
| Friend              | 2       |              |               | 3              |         |           |         | 5          | 13          |
| Booklist            | 2       |              |               |                |         |           | 2       | 4          | 6           |
| Advice of Librarian |         | 2            |               |                |         |           |         | 2          | 2           |
| Browsing            | 5       | 14           |               | 6              | 3       | 2         | 5       | 35         | 43          |
| Kind of Book I Like |         | 10           | 3             | 3              |         | 2         |         | 18         | 20          |
| Total Here          | 9       | 26           | 3             | 12             | 3       | 4         | 7       | 64         |             |
| Grand Total         | 11      | 30           | 4             | 14             | 7       | 6         | 8       |            | 93          |

Most of the figures make sense, i.e., they agree with what we might intuitively expect (e.g., people in professions were the only ones who asked a librarian's advice, and a higher percentage of retired people used browsing than any other group). One fact not shown seems to indicate some inconsistency in the response: of the four people who said they chose the books because of a school assignment, only one was a student, while one was a professional, one a skilled worker, and one unemployed.

Finally, 50 men (53%) and 45 women (47%) returned questionnaires. This distribution is a little different from that of the sex of the borrowers of all 222 loans (see Table 6), but the differences are not significant ( $X^2=2.75$ , 1 df,  $p=.10$ ); when we compare the sex of borrower and the sex of respondent for those loans for which we have completed questionnaires (see Table 7 above), the percentages of men and of women are very much the same. The distribution of men and women respondents who borrowed books in each of the three groups, for all eight months, is random ( $X^2=2.54$ , 2 df,  $p=.30$ ), as it is for all three groups together in Terms 1 and 3 and in Term 2 ( $X^2=0.60$ , 1 df,  $p=.46$ ). Similar results are found when we compare respondents with Group A books and those with books from Groups B and C, in Terms 1 and 3 combined ( $X^2=1.13$ , 1 df,  $p=.30$ ), and when we compare Group A with Groups B and C in Term 2 ( $X^2=1.63$ , 1 df,  $p=.20$ ),

all groups in Terms 1 and 3 combined and in Term 2 ( $X^2=0.60$ , 1 df,  $p=.46$ ), and Group A alone, in Terms 1 and 3 and in Term 2 ( $X^2=0.14$ , 1 df,  $p=.90$ ). The differences in the distribution by sex of respondent of those who borrowed books in Groups B and C combined, in Term 1 and in Term 2, are such that chance alone could have caused them only three times in a hundred trials, but we have only 27 such respondents (37% of all Group B and C loans).

Sec. 5. The Post-Experimental Period and Further Analyses.

When the experimental period ended on Sat., April 21, 1979, it occurred to the investigator that it would be desirable to continue the study of these selected books after those in the special display (Group A) were returned to their regular places on the shelves. The booklists had all been distributed some weeks before that, but of course people who had copies could continue to use them. It was thereupon predicted (a) that the circulation of Group A books would return quickly to the level in the control (pre-experimental) period and comparable to the level of the Group C books all six months, and (b) that the circulation of the Group B books would continue at about the rate in the experimental period and therefore would be well above the level of Group A and of Group C. We were able to monitor the loans of all books in the three groups until Sat., June 30, or ten weeks after the end of the experimental period.

The circulation data for the 10-week post-experimental period are in Table 3 above. Both predictions were in error. The Group A books circulated 20 times, or twice per week vs. 8.8 times per week in Term 2 and 1.2 times per week in Term 1. Group C books continued on a level of 0.6 loans per week vs. 0.7 in Term 2, and 0.8 in Term 1. The circulation of the Group B books dropped to 0.4 per week in the post-experimental period vs. 2.7 in Term 2 and 0.6 in Term 1. Part of the explanation of this apparent contradiction is the element of chance. When we project the number of loans for each group of books in

Term 3 to 13 weeks, and compare the results with the number of loans for each group in Term 1, the differences are within the limits of sampling variability ( $\chi^2=3.68$ , 2 df,  $p=.17$ ).

It is obviously possible that the circulation of Group A declined further after June 30. This suggests a consideration of how the circulation of the books in these three groups changed from week to week in the course of the 8 months; the relevant data appear in Table 14, and are summarized in Table 15. In the experimental period, 62% of the loans of Group A books occurred in the first six weeks and 38% in the other seven weeks, while for Group B the comparable percentages were 39% and 61%, for Group C 44% and 56%, and for all three groups combined 56% and 44%. When we tested the values for Group A in Term 2 (combining weeks 23 and 26 with 22 and 25) against its own average of 10.4 for the 11 time periods, the differences can be accounted for by chance ( $\chi^2=16.02$ , 10 df,  $p=.10$ ). Similarly when we tested the series of Group A weekly loans for consistent preponderance of upward or downward changes, the result was not significant (17). It would seem however that if the experiment had continued much longer, the books in Group A would have stopped circulating altogether. By the same token, one can only wonder why the circulation of the Group B books dropped from 3.1 per week in the second half of Term 2 to 0.4 per week in Term 3. Does a booklist really have so short a useful life?

In the earlier experiment on which this present study was modelled, the control and experimental periods were each six months long. The difference in circulation of the display books was significant, but their over-all rate of increase for six months in the experimental period was 393% of the control period as compared to 712% for three months in this present study. It may be that in the earlier study too the rate of increase of circulation was much higher in the first three months of the experimental period than in the second three months. The decreasing circulation of Group A books in Term 2 was not caused by a lack of relevant books in the display; on 15 different occasions

Table 14. Week-by-Week Circulation Totals of the Books in Each Group for All Eight Months.

| (a)                                | (b)   | (c) | (d) | (e)   | (a)                                   | (b)   | (c) | (d) | (e)   |
|------------------------------------|-------|-----|-----|-------|---------------------------------------|-------|-----|-----|-------|
| Term and Week                      | Group |     |     | Total | Term and Week                         | Group |     |     | Total |
|                                    | A     | B   | C   |       |                                       | A     | B   | C   |       |
| <u>Term One (Pre-Experimental)</u> |       |     |     |       | 19. Feb. 26-Mar. 3                    | 11    | 4   | 2   | 17    |
| 1. Oct. 23-28 '78                  | 2     |     |     | 2     | 20. Mar. 5-10                         | 10    |     | 2   | 12    |
| 2. Oct. 30-Nov. 4                  | 1     | 1   | 1   | 3     | 21. Mar. 12-17                        | 13    | 5   |     | 18    |
| 3. Nov. 6-11                       | 1     | 1   | 1   | 3     | 22. Mar. 19-24                        | 5     | 5   |     | 10    |
| 4. Nov. 13-18                      | 1     |     | 2   | 3     | 23. Mar. 26-31                        | 2     | 3   |     | 5     |
| 5. Nov. 20-25                      | 3     | 1   | 1   | 5     | 24. Apr. 2-7                          | 7     | 7   | 1   | 15    |
| 6. Nov. 27-Dec. 2                  | 1     | 2   | 1   | 4     | 25. Apr. 9-14                         | 5     |     |     | 5     |
| 7. Dec. 4-9                        |       | 1   |     | 1     | 26. Apr. 16-21                        | 1     | 2   | 2   | 5     |
| 8. Dec. 11-16                      | 1     | 2   |     | 3     | Sub-Total                             | 114   | 36  | 9   | 159   |
| 9. Dec. 18-23                      | 1     |     |     | 1     |                                       |       |     |     |       |
| 10. Dec. 25-30                     | 1     |     |     | 1     | <u>Term Three (Post-Experimental)</u> |       |     |     |       |
| 11. Jan. 1-6 '79                   |       |     |     |       | 27. Apr. 23-28                        | 2     |     | 2   | 4     |
| 12. Jan. 8-13                      | 3     |     | 1   | 4     | 28. Apr. 30-May 5                     | 3     |     |     | 3     |
| 13. Jan. 15-20                     | 1     |     | 3   | 4     | 29. May 7-12                          | 3     | 1   |     | 4     |
| Sub-Total                          | 16    | 8   | 10  | 34    | 30. May 14-19                         | 2     |     | 3   | 5     |
|                                    |       |     |     |       | 31. May 21-26                         | 1     |     |     | 1     |
| <u>Term Two (Experimental)</u>     |       |     |     |       | 32. May 28-June 2                     | 2     | 1   |     | 3     |
| 14. Jan. 22-27                     | 20    | 2   |     | 22    | 33. June 4-9                          | 1     |     |     | 1     |
| 15. Jan. 29-Feb. 3                 | 12    |     | 1   | 13    | 34. June 11-16                        | 3     | 1   | 1   | 5     |
| 16. Feb. 5-10                      | 10    |     | 1   | 11    | 35. June 18-23                        |       |     |     |       |
| 17. Feb. 12-17                     | 12    | 6   |     | 18    | 36. June 25-30                        | 3     | 1   |     | 4     |
| 18. Feb. 19-24                     | 6     | 2   |     | 8     | Sub-Total                             | 20    | 4   | 6   | 30    |
|                                    |       |     |     |       | Total                                 | 150   | 48  | 25  | 223   |
|                                    |       |     |     |       |                                       | 67%   | 22% | 11% | 100%  |

Table 15. Summary of Distribution of Loans for Each Group, by Halves of Each Term.

| (a)<br>Time Period   | (b) (c) (d)<br>Group |          |         | (e)<br>Total |
|----------------------|----------------------|----------|---------|--------------|
|                      | A                    | B        | C       |              |
| 1. Pre-Experimental  |                      |          |         |              |
| First 6 Weeks        | 9 (56%)              | 5 (62%)  | 6 (60%) | 20 (59%)     |
| Second 7 Weeks       | 7 (44%)              | 3 (38%)  | 4 (40%) | 14 (41%)     |
| 2. Experimental      |                      |          |         |              |
| First 6 Weeks        | 71 (62%)             | 14 (39%) | 4 (44%) | 89 (56%)     |
| Second 7 Weeks       | 43 (38%)             | 22 (61%) | 5 (56%) | 70 (44%)     |
| 3. Post-Experimental |                      |          |         |              |
| First 5 Weeks        | 13 (65%)             | 2 (50%)  | 5 (83%) | 20 (67%)     |
| Second 5 Weeks       | 7 (35%)              | 2 (50%)  | 1 (17%) | 10 (33%)     |

between Feb. 22 and April 19, 1979, the investigator counted the number of Group A books in the display and available for circulation: the mean average was 32 (or 48% of the total number of books in the group), the median was 32, and the range 28 to 40.

Consideration of the week-by-week circulation leads one to ask about the distribution of loans by day of the week. Table 16 shows that, for all groups combined, Term 1 and Term 3 were similar, and much like the general percentage distribution (by day of the week) of all adult non-fiction loans in this library in 1977/78. In Term 2, the group which is markedly different is Group B, in that 56% of all its loans were on Saturdays vs. 21% for Group A, and 24% for all adult non-fiction loans in 1977/78. We cannot suggest why this should be, and it may be just chance. The differences in the distribution of frequencies between Group A and Group B in Term 2 (combining six days into three pairs) is not significant ( $X^2=3.28$ , 2 df,  $p=.20$ ). However when we compare the loans in Term 2 of Group A books with those of Group B, between Saturdays and all other days combined, the differences are greater than can be explained by chance ( $X^2=14.09$ , 1 df,  $p=.001$ ). Similarly the Spearman rho coefficient of correlation by ranks (between Group B day-of-the-week percentages in Term 2 and the percentages of all adult non-fiction loans in 1977/78) is .27, compared with .73 between the day-of-the-week percentages of Group A in Term 2 and the percentages of all adult non-fiction loans.

Yet another approach to explaining the results of the experiment is to look at the books in each of the three groups which circulated more or less often in the 8 months in question (see Table 17). It may be, for example, that certain titles which were popular in Term 1 were even more popular in Term 2 and account for the bulk of the increase in circulation of the books in Groups A and B; or perhaps the titles with more than one copy each had a disproportionate share of the increased circulation.

Several studies by Trueswell and others (18) have demonstrated that a relatively small percentage of the books in a library account for a relatively large percentage of all loans. This is usually known as the 80-20 rule, since about 80% of the loans are of only about 20% of the books. This is indeed the case with some of the books in this study. When we take Group A books in Terms 1 and 3

Table 16. Distribution by Day of the Week of the Number of Books Borrowed in Each Group and in Each Term, in Comparison with Total Adult Non-Fiction Loans in 1977/78.

| (a)<br>Day of<br>the Week | Term One   |        |         |         | Term Two                               |         |       |          |
|---------------------------|------------|--------|---------|---------|----------------------------------------|---------|-------|----------|
|                           | A          | B      | C       | Total   | A                                      | B       | C     | Total    |
| Monday                    | 2/12%      | 3/38%  | 2/20%   | 7/21%   | 10/9%                                  | 3/8%    | 1/11% | 14/9%    |
| Tuesday                   | 2/12%      | -      | 1/10%   | 3/9%    | 22/19%                                 | 5/14%   | 1/11% | 28/18%   |
| Wednesday                 | 1/6%       | 1/12%  | 3/30%   | 5/15%   | 15/13%                                 | 2/6%    | 2/22% | 19/12%   |
| Thursday                  | 2/12%      | 1/12%  | 1/10%   | 4/12%   | 21/18%                                 | 5/14%   | 1/11% | 27/17%   |
| Friday                    | 3/19%      | 1/12%  | 1/10%   | 5/15%   | 22/19%                                 | 1/3%    | 3/33% | 26/16%   |
| Saturday                  | 6/38%      | 2/25%  | 2/20%   | 10/29%  | 24/21%                                 | 20/56%  | 1/11% | 45/28%   |
| Total                     | 16/99%     | 8/99%  | 10/100% | 34/101% | 114/99%                                | 36/101% | 9/99% | 159/100% |
|                           | Term Three |        |         |         | Total Loans of All Groups in All Terms |         |       |          |
|                           | (j)        | (k)    | (l)     | (m)     | (n)                                    | (o)     |       |          |
| Monday                    | 3/15%      | 1/25%  | -       | 4/13%   | 25/11%                                 | 15%     |       |          |
| Tuesday                   | 2/10%      | 1/25%  | 1/17%   | 4/13%   | 35/16%                                 | 16%     |       |          |
| Wednesday                 | 3/15%      | -      | -       | 3/10%   | 27/12%                                 | 16%     |       |          |
| Thursday                  | 2/10%      | 1/25%  | -       | 3/10%   | 34/15%                                 | 13%     |       |          |
| Friday                    | 4/20%      | -      | 1/17%   | 5/17%   | 36/16%                                 | 16%     |       |          |
| Saturday                  | 6/30%      | 1/25%  | 4/67%   | 11/37%  | 66/30%                                 | 24%     |       |          |
| Total                     | 20/100%    | 4/100% | 6/101%  | 30/100% | 223/100%                               | 100%    |       |          |

Source of column (o): Herbert Goldhor, "Analysis of the Daily Circulation Data for 1977/78 of the Kingston and St. Andrew Parish Library" (unpublished MS, 1978), p. 14.

plus Group B books in Terms 1 and 3, plus Group C books in all three terms (what we will call the residual group), there were a total of 73 loans of all 144 books; 58 loans (79% of the 73) were of 28 books (19% of the 144). Essentially the same results were found for Group A books separately in Term 1 and in Term 3, for Group B books separately in Term 1 and in Term 3, and for Group C books alone in each term separately and in all three terms combined.

However, in Term 2 the picture changes for Group A and for Group B. There were in all 114 loans of the 66 Group A books in Term 2; to account for 91 loans (80% of the 114) requires 30 books (45% of the 66). The difference between 58 loans of 28 books (from the residual group above) and these 91 loans of 30 books is not significant however.

Table 17. Distribution of the Books in Each Group and in Each Term by the Number of Loans.

Part A. In Term One.

| (a)<br>No. of<br>Loans | (b)<br>Group A<br>Books | (c)<br>Loans | (d)<br>Group B<br>Books | (e)<br>Loans | (f)<br>Group C<br>Books | (g)<br>Loans | (h)<br>Total<br>Books | (i)<br>Loans |
|------------------------|-------------------------|--------------|-------------------------|--------------|-------------------------|--------------|-----------------------|--------------|
| 0                      | 53/80%                  | -            | 32/82%                  | -            | 30/77%                  | -            | 115/80%               | -            |
| 1                      | 10/15%                  | 10/62%       | 6/15%                   | 6/75%        | 8/21%                   | 8/80%        | 24/17%                | 24/71%       |
| 2                      | 3/5%                    | 6/38%        | 1/3%                    | 2/25%        | 1/3%                    | 2/20%        | 5/3%                  | 10/29%       |
| Total                  | 66/100%                 | 16/100%      | 39/100%                 | 8/100%       | 39/101%                 | 10/100%      | 144/100%              | 34/100%      |

Part B. In Term Two.

|       |         |          |         |        |         |        |          |          |
|-------|---------|----------|---------|--------|---------|--------|----------|----------|
| 0     | 11/17%  | -        | 12/31%  | -      | 32/82%  | -      | 55/38%   | -        |
| 1     | 16/24%  | 16/14%   | 19/49%  | 19/53% | 5/13%   | 5/56%  | 40/28%   | 40/25%   |
| 2     | 23/35%  | 46/40%   | 7/18%   | 14/39% | 2/5%    | 4/44%  | 32/22%   | 64/40%   |
| 3     | 12/18%  | 36/32%   | 1/3%    | 3/8%   | -       | -      | 13/9%    | 39/25%   |
| 4     | 4/6%    | 16/14%   | -       | -      | -       | -      | 4/3%     | 16/10%   |
| Total | 66/100% | 114/100% | 39/101% | 36/99% | 39/100% | 9/100% | 144/100% | 159/100% |

Part C. In Term Three.

|       |         |         |         |        |         |        |          |         |
|-------|---------|---------|---------|--------|---------|--------|----------|---------|
| 0     | 49/74%  | -       | 36/92%  | -      | 34/87%  | -      | 119/83%  | -       |
| 1     | 14/21%  | 14/70%  | 2/5%    | 2/50%  | 4/10%   | 4/67%  | 20/14%   | 20/67%  |
| 2     | 3/5%    | 6/30%   | 1/3%    | 2/50%  | 1/3%    | 2/33%  | 5/3%     | 10/33%  |
| Total | 66/100% | 20/100% | 39/100% | 4/100% | 39/100% | 6/100% | 144/100% | 30/100% |

Part D. For All Three Terms.

|       |         |          |         |        |         |         |          |          |
|-------|---------|----------|---------|--------|---------|---------|----------|----------|
| 0     | 8/12%   | -        | 11/28%  | -      | 24/62%  | -       | 43/30%   | -        |
| 1     | 15/23%  | 15/10%   | 15/38%  | 15/31% | 8/21%   | 8/32%   | 38/26%   | 38/17%   |
| 2     | 15/23%  | 30/20%   | 9/23%   | 18/38% | 6/15%   | 12/48%  | 30/21%   | 60/27%   |
| 3     | 17/26%  | 51/34%   | 2/5%    | 6/12%  | -       | -       | 19/13%   | 57/26%   |
| 4     | 5/8%    | 20/13%   | 1/3%    | 4/8%   | -       | -       | 6/4%     | 24/11%   |
| 5     | 2/3%    | 10/7%    | 1/3%    | 5/10%  | 1/3%    | 5/20%   | 4/3%     | 20/9%    |
| 6     | 4/6%    | 24/16%   | -       | -      | -       | -       | 4/3%     | 24/11%   |
| Total | 66/101% | 150/100% | 39/100% | 48/99% | 39/101% | 25/100% | 144/100% | 223/101% |

How to Read This Table: In Term 1, 53 books (80% of all 66 books in Group A) had no loans, 10 books (15%) had one loan each (and these 10 loans were 62% of all 16 loans of Group A books), etc.

Similarly there were 36 loans of the 39 Group B books in Term 2; to account for 29 loans (81% of the 36) requires 17 books (44% of the 39). The difference between 58 loans of 28 books and these 29 loans of 17 books is no greater than

chance alone can cause. On the other hand, the two experimental treatments increased significantly both the number of books and the number of titles which were borrowed in Term 2 over the number borrowed in Term 1. Thus for Group A, 12 titles were borrowed in Term 1 (22% of all 55 titles), and 46 (84%) in Term 2; for Group B, 7 titles (23% of all 30) in Term 1 and 24 (80%) in Term 2; on the other hand, for Group C, 8 titles were borrowed in Term 1 (27% of all 30), and 7 (23%) in Term 2.

Table 18 summarizes the number of books in Groups A, B and C which were borrowed one or more times in each of the three terms. The data for Term 1 are very much like those for Term 3, while the figures for Term 2 are clearly different.

Table 18. Distribution of All books in Groups A, B and C by Number of Times Borrowed in Each of Three Terms.

| (a)<br>No. of Times<br>Borrowed | (b)<br>Term 1   |                      | (d)<br>Term 2   |                      | (f)<br>Term 3   |                      |
|---------------------------------|-----------------|----------------------|-----------------|----------------------|-----------------|----------------------|
|                                 | No. of<br>Books | (c)<br>% of<br>Total | No. of<br>Books | (e)<br>% of<br>Total | No. of<br>Books | (g)<br>% of<br>Total |
| 0                               | 115             | 80%                  | 55              | 38%                  | 119             | 83%                  |
| 1                               | 24              | 17                   | 40              | 28                   | 20              | 14                   |
| 2                               | 5               | 3                    | 32              | 22                   | 5               | 3                    |
| 3                               | -               |                      | 13              | 9                    | -               |                      |
| 4                               | -               |                      | 4               | 3                    | -               |                      |
| Total                           | 144             | 100%                 | 144             | 100%                 | 144             | 100%                 |

Furthermore, those titles with more than one copy each did not bias these results. Of all 115 titles in Groups A, B and C, 19 (17%) had from two to six copies each, for an average of 2.5 copies each; of the 144 books in the three groups, 48 (33%) were of titles with more than one copy each. These 144 books were borrowed 223 times in the eight months which are covered by the three terms; the 48 books of multi-copy titles accounted for 66 loans (30% of the 223), or a lesser percentage than they were of all books. To put it another way, in these eight months the 48 books of multi-copy titles had an average of 1.4 loans each; the 96 single-copy titles 1.6 loans each.

This lack of bias from the multi-copy titles was true of each of the three groups of books separately, each of the three terms separately, and specifically of Group A in Term 2 and of Group B in Term 2 (19).

We can also say that the quality of the books borrowed in Term 2 was not appreciably different from the quality of those borrowed in Term 1; the former was a little lower in Group A and a little higher in Group B (see Table 19), but the differences are not significant in either case. The 223 books which were borrowed in all three groups in all three terms were found listed in an average of 4.6 tools; the total number of books in all three groups in all three terms which were not borrowed were in an average of 4.7 tools (another indication that circulation is not correlated with quality). The comparable figures for Group A are 150 loans found in an average of 4.4 tools vs. a cumulative total of 113 books which were not borrowed found in an average of 5.1 tools; for Group B, 48 in 4.3 tools vs. 80 in 3.8 tools; and for Group C, 25 in 6.3 vs. 96 in 5.0. None of these differences is significant.

There were 28 titles (and 34 copies) which were not borrowed in any of the three terms; they were found in an average of 3.6 tools (3.4); 6 (6) of these in Group A were in an average of 4.8 tools, 5 (8) in Group B in 2.6 (2.8), and 17 (20) in Group C in 3.4 (3.2). On the other hand, there are 29 titles (and 33 copies) which were each borrowed from 3 to 6 times in the course of these eight months, and they were found in an average of 4.7 tools (5.4); 23 (26) of these in Group A were in an average of 3.6 tools (4.6), 4 (5) in Group B in 6.2 (6.2), and 2 in Group C in 12.5. We compared the numbers of tools in which were found the 28 titles never borrowed and the 29 titles which were borrowed three or more times each; the probability of the difference between the two means occurring by chance alone is .18. However when we compare the number of tools in which were found the 34 books (copies, not titles) never borrowed and the 33 books borrowed three or more times, the difference between the two means could occur by chance only two times in a hundred trials.

Table 19. Distribution by Quality of the Titles and Copies of Each Group, and of the Books Borrowed of Each Group in Each Term.

| (a)          | (b)        | (c)        | (d)            | (e)  | (f)  | (g)   | (h)        | (i)        | (j)            | (k)  | (l)  | (m)   |
|--------------|------------|------------|----------------|------|------|-------|------------|------------|----------------|------|------|-------|
| No. of Tools | Group A    |            |                |      |      |       | Group B    |            |                |      |      |       |
|              | All Titles | All Copies | Books Borrowed |      |      |       | All Titles | All Copies | Books Borrowed |      |      |       |
|              |            |            | T1             | T2   | T3   | Total |            |            | T1             | T2   | T3   | Total |
| 0            | 13%        | 11%        | -              | 11%  | 14%  | 10%   | 7%         | 5%         | 12%            | 6%   | -    | 6%    |
| 1-2          | 25%        | 24%        | 38%            | 28%  | 29%  | 29%   | 33%        | 33%        | 38%            | 25%  | 25%  | 27%   |
| 3-5          | 29%        | 29%        | 31%            | 30%  | 24%  | 29%   | 40%        | 41%        | 25%            | 42%  | -    | 35%   |
| 6+           | 33%        | 36%        | 31%            | 32%  | 33%  | 32%   | 20%        | 21%        | 25%            | 28%  | 75%  | 31%   |
| Total        | 100%       | 100%       | 100%           | 101% | 100% | 100%  | 100%       | 100%       | 100%           | 100% | 100% | 99%   |
| Mean         | 4.2        | 4.8        | 4.6            | 4.4  | 4.4  | 4.4   | 3.8        | 3.9        | 4.1            | 4.3  | 5.0  | 4.3   |
| Number       | 55         | 66         | 16             | 114  | 20   | 150   | 30         | 39         | 8              | 36   | 4    | 48    |
| Group C      |            |            |                |      |      | Total |            |            |                |      |      |       |
| 0            | 13%        | 15%        | 20%            | 11%  | -    | 12%   | 11%        | 10%        | 9%             | 9%   | 10%  | 9%    |
| 1-2          | 20%        | 15%        | -              | 22%  | 17%  | 12%   | 26%        | 24%        | 26%            | 27%  | 27%  | 27%   |
| 3-5          | 43%        | 38%        | 40%            | 11%  | 33%  | 28%   | 36%        | 35%        | 32%            | 31%  | 20%  | 30%   |
| 6+           | 23%        | 31%        | 40%            | 56%  | 50%  | 48%   | 27%        | 31%        | 32%            | 32%  | 43%  | 34%   |
| Total        | 99%        | 99%        | 100%           | 100% | 100% | 100%  | 100%       | 100%       | 99%            | 99%  | 100% | 100%  |
| Mean         | 4.1        | 5.2        | 5.8            | 6.1  | 7.5  | 6.3   | 4.1        | 4.7        | 4.8            | 4.5  | 5.1  | 4.6   |
| Number       | 30         | 39         | 10             | 9    | 6    | 25    | 115        | 144        | 34             | 159  | 30   | 223   |

Column (a) is the measure of quality, defined as the number of book evaluation tools in which each title was found listed.

Columns (c) and (i) include not only duplicate copies but different volumes, parts, and editions of the same title.

On a title basis, quality does not distinguish the most popular from the least popular, but on a copy basis it does, because better quality titles were more often duplicated than titles of lesser quality. The 19 titles in all three groups which had two or more copies had an average quality rating of 5.1 vs. 3.9 for the 96 single-copy titles; the difference is not significant.

We examined seven characteristics of the 144 books in Groups A, B, and C to ascertain whether any characteristic differs significantly between those books which were and were not borrowed in each term, both for all three groups together and for each separately, and therefore could possibly account for the increases in circulation of Group A and Group B books in Term 2. The relevant data are summarized in Table 20. The year of acquisition, for example, was not different (i.e., more recent) for books borrowed compared with those not borrowed

Table 20. Results of Comparing Those Books Which Were Not Borrowed in Each Term with Those Which Were, in regard to Selected Characteristics.

| (a)<br><u>Characteristic</u> | (b)<br><u>Group</u> | (c)<br><u>Term</u> | (d)<br><u>Means</u> | (e)<br><u>Significance<br/>of Difference</u> |
|------------------------------|---------------------|--------------------|---------------------|----------------------------------------------|
| 1. Year of Acquisition       | A,B,C               | 1                  | 1963.5/1966.0       | .02                                          |
|                              | A                   | 1                  | 1964.1/1966.1       | ns                                           |
|                              | B                   | 1                  | 1963.7/1964.6       | ns                                           |
|                              | C                   | 1                  | 1962.2/1966.3       | .04                                          |
|                              | A,B,C               | 2                  | 1963.3/1964.5       | ns                                           |
|                              | A                   | 2                  | 1962.0/1965.1       | ns                                           |
|                              | B                   | 2                  | 1965.0/1963.4       | ns                                           |
|                              | C                   | 2                  | 1963.2/1963.3       | ns                                           |
|                              | A,B,C               | 3                  | 1963.7/1965.4       | ns                                           |
|                              | A                   | 3                  | 1964.1/1966.2       | ns                                           |
|                              | B                   | 3                  | 1963.8/1965.0       | ns                                           |
|                              | C                   | 3                  | 1963.2/1962.8       | ns                                           |
|                              |                     |                    |                     |                                              |
|                              |                     |                    |                     |                                              |
|                              |                     |                    |                     |                                              |
| 2. Year of Publication       | A,B,C               | 1                  | 1957.7/1960.7       | ns/.08                                       |
|                              | A                   | 1                  | 1957.2/1958.6       | ns                                           |
|                              | B                   | 1                  | 1959.6/1960.9       | ns                                           |
|                              | C                   | 1                  | 1956.7/1963.6       | .05                                          |
|                              | A,B,C               | 2                  | 1958.4/1958.3       | ns                                           |
|                              | A                   | 2                  | 1956.1/1957.8       | ns                                           |
|                              | B                   | 2                  | 1960.8/1959.3       | ns                                           |
|                              | C                   | 2                  | 1958.3/1958.1       | ns                                           |
|                              | A,B,C               | 3                  | 1958.1/1959.2       | ns                                           |
|                              | A                   | 3                  | 1957.2/1958.2       | ns                                           |
|                              | B                   | 3                  | 1959.5/1963.7       | ns                                           |
|                              | C                   | 3                  | 1958.1/1959.8       | ns                                           |
|                              |                     |                    |                     |                                              |
|                              |                     |                    |                     |                                              |
|                              |                     |                    |                     |                                              |
| 3. Number of Pages           | A,B,C               | 1                  | 306.8/298.0         | ns                                           |
|                              | A                   | 1                  | 337.4/317.2         | ns                                           |
|                              | B                   | 1                  | 264.4/284.3         | ns                                           |
|                              | C                   | 1                  | 298.0/281.0         | ns                                           |
|                              | A,B,C               | 2                  | 301.3/307.4         | ns                                           |
|                              | A                   | 2                  | 366.3/326.9         | ns                                           |
|                              | B                   | 2                  | 261.0/271.1         | ns                                           |
|                              | C                   | 2                  | 294.0/294.4         | ns                                           |
|                              | A,B,C               | 3                  | 303.9/310.5         | ns                                           |
|                              | A                   | 3                  | 337.0/323.2         | ns                                           |
|                              | B                   | 3                  | 275.8/174.3         | ns                                           |
|                              | C                   | 3                  | 286.0/349.0         | ns                                           |
|                              |                     |                    |                     |                                              |
|                              |                     |                    |                     |                                              |
|                              |                     |                    |                     |                                              |

Note to Column (d): The first mean is that of all books not borrowed in that term; the second that of all books borrowed one or more times in that term.

Table 20 (Cont.)

| (a)<br>Characteristic                                   | (b)<br>Group | (c)<br>Term | (d)<br>Means | (e)<br>Significance<br>of Difference |
|---------------------------------------------------------|--------------|-------------|--------------|--------------------------------------|
| 4. Number of Illustrations                              | A,B,C        | 1           | 11.7/10.2    | ns                                   |
|                                                         | A            | 1           | 9.5/6.6      | ns                                   |
|                                                         | B            | 1           | 18.4/6.6     | ns/.07                               |
|                                                         | C            | 1           | 8.5/18.2     | ns                                   |
|                                                         | A,B,C        | 2           | 13.6/10.1    | ns                                   |
|                                                         | A            | 2           | 5.5/9.7      | ns                                   |
|                                                         | B            | 2           | 27.8/11.1    | .001                                 |
|                                                         | C            | 2           | 11.0/9.4     | ns                                   |
|                                                         | A,B,C        | 3           | 11.7/10.1    | ns                                   |
|                                                         | A            | 3           | 8.5/10.4     | ns                                   |
|                                                         | B            | 3           | 16.9/8.7     | ns                                   |
|                                                         | C            | 3           | 10.9/10.0    | ns                                   |
| 5. Physical Condition<br>(1=good,<br>2=fair,<br>3=poor) | A,B,C        | 1           | 1.3/1.4      | ns                                   |
|                                                         | A            | 1           | 1.3/1.4      | ns                                   |
|                                                         | B            | 1           | 1.2/1.4      | ns                                   |
|                                                         | C            | 1           | 1.4/1.3      | ns                                   |
|                                                         | A,B,C        | 2           | 1.3/1.3      | ns                                   |
|                                                         | A            | 2           | 1.4/1.3      | ns                                   |
|                                                         | B            | 2           | 1.2/1.3      | ns                                   |
|                                                         | C            | 2           | 1.4/1.3      | ns                                   |
|                                                         | A,B,C        | 3           | 1.3/1.3      | ns                                   |
|                                                         | A            | 3           | 1.4/1.3      | ns                                   |
|                                                         | B            | 3           | 1.3/1.0      | ns                                   |
|                                                         | C            | 3           | 1.3/1.6      | ns                                   |
| 6. Book Jacket<br>(0=none,<br>1=with)                   | A,B,C        | 1           | 0.2/0.3      | ns                                   |
|                                                         | A            | 1           | 0.2/0.3      | ns                                   |
|                                                         | B            | 1           | 0.2/0.4      | ns                                   |
|                                                         | C            | 1           | 0.2/0.2      | ns                                   |
|                                                         | A,B,C        | 2           | 0.2/0.2      | ns                                   |
|                                                         | A            | 2           | 0.1/0.2      | ns                                   |
|                                                         | B            | 2           | 0.1/0.3      | ns                                   |
|                                                         | C            | 2           | 0.2/0.3      | ns                                   |
|                                                         | A,B,C        | 3           | 0.2/0.4      | .01                                  |
|                                                         | A            | 3           | 0.2/0.4      | ns                                   |
|                                                         | B            | 3           | 0.2/0.3      | ns                                   |
|                                                         | C            | 3           | 0.2/0.6      | .04                                  |
| 7. Number of Book<br>Selection Tools in<br>Which Listed | A,B,C        | 1           | 4.6/4.7      | ns                                   |
|                                                         | A            | 1           | 4.8/4.5      | ns                                   |
|                                                         | B            | 1           | 3.9/4.0      | ns                                   |
|                                                         | C            | 1           | 5.1/5.6      | ns                                   |
|                                                         | A,B,C        | 2           | 4.9/4.5      | ns                                   |
|                                                         | A            | 2           | 6.4/4.5      | ns                                   |
|                                                         | B            | 2           | 3.5/4.1      | ns                                   |
|                                                         | C            | 2           | 5.0/6.1      | ns                                   |
|                                                         | A,B,C        | 3           | 4.6/5.0      | ns                                   |
|                                                         | A            | 3           | 4.9/4.5      | ns                                   |
|                                                         | B            | 3           | 3.9/4.7      | ns                                   |
|                                                         | C            | 3           | 4.9/6.8      | ns                                   |

in Term 2, nor was year of publication, number of pages, number of illustrations, physical condition, presence or absence of a book jacket, or the number of book selection tools in which these volumes were found listed. There were 84 calculations in all and 78 showed no significant differences. Of six p values at or below .05, three occurred in Term 1, two in Term 3, and only one in Term 2; that last one (in Group B) favored the books which were not borrowed (they had an average of 28 illustrations each, vs. 11 for those which were borrowed), while the other five "favored" the borrowed books. We also compared the number of book evaluation tools in which were listed the Group A books borrowed in Term 2, the Group B books borrowed in Term 2, and the Group C books borrowed in any of the three terms. The differences (by analysis of variance) were well within the limits of chance.

We sought to summarize these separate individual relationships by the application of discriminant analysis (a) to the recorded circulation of all 195 titles for which complete data were available for 1974-78, (b) to the recorded circulation of 265 titles in 1978 alone, and (c) to the 144 books in Groups A, B, and C in regard to their circulation in the eight months of Terms 1-3. Ten variables were used in an effort to find whether together they distinguished those titles/books which circulated most from those which circulated least; the ten variables are year of acquisition, whether purchased or received as a gift, country of publication, year of publication, physical condition, presence or absence of a book jacket, number of pages, number of illustrations, whether or not rebound, and number of book evaluation tools in which listed. Tables 21 and 22 summarize the relevant data. Most of these variables are not the same for all copies of each title; one copy of each of the 56 multi-copy titles was arbitrarily coded to represent the title. To whatever extent the other 79 copies were different from the ones analyzed here, these results may be incorrect.

Discriminant analysis is a special case of canonical (multivariate) cor-

relation, and is used for measuring the extent to which the combination of specified variables discriminates accurately between cases in the original groups. In this study we used only two groups of titles at a time, defined in terms of the number of recorded loans in a given time period. Thus in row A of Table 21, the first group consists of those titles which were loaned 0 to 6 times, in 1974-78, and the second group those which were loaned 7 or more times. Since we used only two sets or groups, we could search for only one main discriminant function. The coefficients in Table 22 indicate how much each variable listed helps to differentiate between the two groups.

In Table 21, the eigenvalues and the coefficients of canonical correlation are both measures of how well the discriminant function in question distinguishes between the two specified groups. The eigenvalue is the percentage of the total variance of the ten specified variables, which is associated with this discriminant function; it is a measure of the importance of the function. The canonical correlation measures the association between the discriminant function and the ten specified variables as a group. All eigenvalues and canonical correlations in Table 21 are low to moderate, indicating indirectly that all ten variables together do not distinguish particularly well between the two groups of books created by the number of their loans.

Wilks' lambda is a direct measure of how well the variables in question are able to discriminate between the two sets of cases; the higher the value of Wilks' lambda, the less discriminating power. The chi-square and significance columns measure whether the discriminating power of the ten variables is or is not greater than might occur by chance alone. It will be seen that lambda is consistently between .82 and .90, with chi-square values which are significant in all but row F. That is to say, the significance values (col. f) of rows A-E indicate that these ten variables do differentiate the two sets of books, in each case better than sampling error alone could explain. Alternatively, in row F, the significance column shows that in 14 times of 100 repeated trials,

Table 21. Results of Discriminant Analysis, Using Ten Variables Applied to Designated Titles or Books as Defined by Their Recorded Circulation in 1974-78, in 1978 Alone, and in Terms 1-3.

|                                                                                  | (a)<br>Definition of<br>Groups by<br>No. of Loans | (b)<br>Eigen-<br>value | (c)<br>Coeff. of<br>Canonical<br>Correlation | (d)<br>Wilks'<br>Lambda | (e)<br>Chi-<br>Square | (f)<br>Signifi-<br>cance | (g)<br>Group<br>Centroids | (h)<br>% of Cases<br>Correctly<br>Classified |
|----------------------------------------------------------------------------------|---------------------------------------------------|------------------------|----------------------------------------------|-------------------------|-----------------------|--------------------------|---------------------------|----------------------------------------------|
| <u>Part A. Using 1974-78 Total Recorded Circulation per Title of Groups A-D.</u> |                                                   |                        |                                              |                         |                       |                          |                           |                                              |
| A.                                                                               | 0-6, 7-82                                         | .13                    | .33                                          | .89                     | 22.14                 | .01                      | .34/- .36                 | 65%                                          |
| B.                                                                               | 0-7, 8-82                                         | .14                    | .36                                          | .87                     | 25.32                 | .005                     | .32/- .45                 | 69%                                          |
| C.                                                                               | 0-9, 10-82                                        | .21                    | .42                                          | .82                     | 36.32                 | .000                     | .32/- .66                 | 71%                                          |
| D.                                                                               | 0-10, 11-82                                       | .22                    | .42                                          | .82                     | 37.03                 | .000                     | .29/- .73                 | 72%                                          |
| <u>Part B. Using 1978 Total Recorded Circulation per Title of Groups A-D.</u>    |                                                   |                        |                                              |                         |                       |                          |                           |                                              |
| E.                                                                               | 0, 1-15                                           | .15                    | .36                                          | .87                     | 36.68                 | .000                     | .48/- .31                 | 63%                                          |
| <u>Part C. Using Circulation per Book in Terms 1-3 of Groups A, B and C.</u>     |                                                   |                        |                                              |                         |                       |                          |                           |                                              |
| F.                                                                               | 0, 1+                                             | .11                    | .32                                          | .90                     | 14.90                 | .136                     | .52/- .22                 | 61%                                          |

Table 22. Highest Five Canonical Discriminant Function Coefficients, From Each Analysis of Table 21.

| (a)      |                                                     | (b) (c) (d) (e) (f) (g)        |      |      |      |      |      | (h)   |
|----------|-----------------------------------------------------|--------------------------------|------|------|------|------|------|-------|
|          |                                                     | From Specified Row of Table 21 |      |      |      |      |      |       |
| Variable |                                                     | A                              | B    | C    | D    | E    | F    | Mean* |
| 1.       | Year of Acquisition                                 | -.72                           | -.71 | -.64 | -.76 | -.82 | -.73 | .73   |
| 2.       | Year of Publication                                 | -.40                           | -.45 | -.55 | -.45 | -.25 |      | .42   |
| 3.       | Whether or Not Rebound                              | -.37                           | -.30 |      | -.19 | -.43 | -.57 | .37   |
| 4.       | Purchased (0) or gift (1)                           | -.27                           | -.27 | -.21 | -.22 |      |      | .24   |
| 5.       | Number of Pages                                     | -.45                           | -.37 | -.27 |      |      |      | .36   |
| 6.       | Physical Condition: good (0),<br>fair (1), poor (2) |                                |      | .22  | .27  | -.58 |      | .36   |
| 7.       | With (1) or Without (0) Book<br>Jacket              |                                |      |      |      |      | -.35 |       |
| 8.       | No. of Book Evaluation Tools<br>in Which Listed     |                                |      |      |      | .34  |      |       |
| 9.       | No. of Illustrations                                |                                |      |      |      |      | .31  |       |
| 10.      | Country of Publication:<br>UK (1), US (2)           |                                |      |      |      |      | -.30 |       |

\*without regard to sign

chance alone would differentiate those books in Groups A, B and C which were borrowed in Terms 1-3, from those which were not, as well or better than did the ten specified variables. This lends indirect support to the idea that the two experimental treatments made a major contribution to this end in Term 2.

Note that on all measures, the discriminant analysis function improves as we go from row A to row D in part A of Table 21. Apparently the higher the cutting point between those books which were borrowed less/more often, the greater the ability of the ten specified variables to account for their circulation differences.

The group centroids are simply the means of the two groups on the discriminant function, and tell us how far apart they are along a continuum on either side of a zero midpoint; the absolute differences between the two values in each row are reasonably high. Once discriminant analysis has been completed, the original cases can be classified by the derived formulas into two predicted groups, and their membership can be compared with that of the original specified sets. The higher the percentage of cases "correctly" classified, the more efficient is the discriminant function. In Table 21, 61% to 72% of the cases are correctly classified, a reasonably high level.

Finally, Table 22 identifies the five variables (in each of the six applications of discriminant analysis) which had the highest coefficients with the overall discriminant function. The coefficients are all reported as standard scores with mean of zero and standard deviation of one, thus permitting direct comparison between them. Year of acquisition consistently has the greatest association with the total discriminant function, and well above the second place variable. In four of the six analyses, the second most important variable is year of publication; in third place is whether the book was rebound or not. The negative signs in Table 21 mean that each such variable is associated with the group centroid in column (g) of Table 20 which also has the negative sign. In all cases in Table 21, the second group of column (a) is also the second group

of column (g); in other words the negative group centroids all belong to those books with the larger number of loans. Thus, for example, books which were acquired later (i.e., had higher "year of acquisition") are consistently more likely to have been borrowed in all three time periods tested than books which were acquired earlier. For each nominal or ordinal variable of Table 22, we show its code values; thus there was a tendency for books which were received as gifts to be borrowed more often than those which were purchased, and for less-than-good physical condition to be associated with books of lower circulation in 1974-78 but with those of higher circulation in 1978.

In summary, this application of discriminant analysis indicates that the ten specified variables have a respectable but modest ability to characterize differentially the various dichotomous groupings of books by their circulation over a year or more in the recent past. This differentiating ability is greater than random chance can account for; but on the other hand, one or more other factors (not yet identified) presumably account for the remaining major portion of the variability in the circulation of these books. However these ten variables are definitely less successful in distinguishing books which did and did not circulate in an 8-month period dominated by two experimental treatments.

We used still another approach, viz., we compared the books loaned in either Term 1 or Term 3 with whether or not they were circulated in Term 2, and those not loaned in either Term 1 or Term 3 with whether or not they were circulated in Term 2. We did this separately for Group A, for Group B, and for Group C, and then for all three groups together. We made these comparisons with regard to each of seven variables (year of acquisition, year of publication, number of pages, number of illustrations, physical condition, presence or absence of a book jacket, and number of evaluation tools in which these books were listed). We used multiple analysis of variance, and got results in each case (a) for loans/no loans within Term 1 or Term 3, (b) loans/no loans within Term 2, and

(c) for the subdivision of Term 1 or Term 3 loans/no loans by whether or not the books in each category were or were not loaned in Term 2. Of the resulting 84 tests of significance (3 for each of 7 variables for each of 4 groups or combination of groups), only 12 (14%) were significant at or below the .05 level (see Table 23). Of these, 8 do not involve Term 2 at all. Thus 41 books in Group A which were not borrowed in either Term 1 or Term 3 had a mean average year of acquisition of 1963.6, while 25 books in Group A which were borrowed one or more times in Term 1 or Term 3 had a mean average year of acquisition of 1966.3; this difference is significant at the .05 level. Note that only one of these 8 significant differences registers at a level below .01, and that is the presence or absence of a book jacket in all 144 books; those books which were borrowed in either Terms 1 or 3 had a book jacket significantly more often than was true of those not borrowed.

Our interest however is in the four tests which do involve Term 2; all four occur in Group B, and only one concerns Term 2 loans as such. The 12 books not borrowed in Term 2 had significantly more illustrations than did the 27 books which were circulated. The 18 books which were not borrowed in Terms 1 or 3 but did circulate in Term 2 were acquired on the average by KSAPL earlier than was true of any of the other three possible groupings (20), had a higher average number of pages than did two of the three other groupings, and were found in a higher average number of book evaluation tools than two of the other three. (One grouping in each of these last three comparisons consisted of exactly one book.) In other words, all four of these significant differences are of variables which might be expected to inhibit circulation (as indeed they did in Terms 1 and 3), i.e., the books in Group B which were borrowed in Term 2 had fewer illustrations, had been acquired earlier, had more pages, and were of higher quality than was true of those not borrowed in Term 2. Apparently the experimental treatment used in Group B (the booklist) was able to overcome the effect of these factors.

Table 23. Significant Differences by Group, Between Books Borrowed and Not Borrowed in Designated Terms, for Specified Variables.

| <u>Variable</u>                    | <u>Group<br/>A</u> | <u>Group<br/>B</u> | <u>Group<br/>C</u> | <u>Groups<br/>A+B+C</u> |
|------------------------------------|--------------------|--------------------|--------------------|-------------------------|
| 1. Year of Acquisition             | T1T3 .05           | T1T3/T2<br>.02     | T1T3<br>.04        | T1T3 .01                |
| 2. Book Jacket                     | T1T3 .02           |                    |                    | T1T3 .001               |
| 3. No. of Pages                    | T1T3/T2<br>.001    |                    |                    |                         |
| 4. No. of Illustrations            | T1T3 .02<br>T2 .01 |                    |                    |                         |
| 5. No. of Book Evaluation<br>Tools | T1T3/T2<br>.001    |                    |                    |                         |
| 6. Year of Publication             |                    |                    | T1T3<br>.05        | T1T3 .01                |

T1T3=comparison between the books loaned and those not loaned in either Term 1 or Term 3.

T2=comparison between the books loaned and those not loaned in Term 2.

T1T3/T2-comparison between those books loaned or not loaned in Term 2 and which had been loaned or not loaned in either Term 1 or Term 3.

It appears that no variable or combination of variables (for which we have data) adequately serves to explain why certain books were not borrowed at all in the eight months of this study, and other books were borrowed up to six times each. One further possibility was explored: since books on the regular shelves (viz., all but Group A in Term 2) were arranged alphabetically by the last name of the biographee, readers looking for an interesting book (and not a biography of a specific person) would presumably start somewhere at the beginning or in the middle of the alphabet and find an acceptable title before getting to the end. If this reasoning is correct, there should be an inverse relation between the alphabetical order of these books on the regular shelves (low to high) and their total loans in these eight months (high to low), and a direct relation between alphabetical order on the shelves (low to high) and the number of books

which were never borrowed in the eight months (low to high).

When we compared (a) the distribution of all relevant loans by whether the books were in the first or second half of the alphabet, with (b) the comparable distribution of those books which were not borrowed at all, the two distributions were both in the predicted direction but the differences between them are no greater than might arise by sampling fluctuations (see Table 24). We combined the letters of the alphabet into nine pairs (for which we had biographies about people whose last names began with those letters), and found a Spearman rho coefficient of rank correlation of  $-.53$  between the nine pairs of letters (from low to high) and the number of loans of books in each pair (from high to low). Similarly the Spearman coefficient of rank correlation is  $.56$  between the order of the pairs of letters and the number of books which did not circulate and whose "book number" began with those letters (in both cases from low to high). In both cases, the probability of a coefficient of rank correlation of this size occurring by chance alone is greater than  $.05$  in a one-tailed test; in other words neither coefficient ( $-.53$  and  $.56$ ) is significantly different from zero.

Table 24. Distribution by Two Halves of the Alphabet of Loans and of Books with No Loans.

| (a)<br>Letters of<br>the Alphabet | (b)<br>No. of<br>Loans | (c)<br>No. of Books<br>With No Loans | (d)<br>Total |
|-----------------------------------|------------------------|--------------------------------------|--------------|
| A-J                               | 66 (61%)               | 19 (44%)                             | 85 (56%)     |
| K-W                               | 43 (39%)               | 24 (56%)                             | 67 (44%)     |
| Total                             | 109(100%)              | 43(100%)                             | 152(100%)    |

$$(\chi^2=2.72, 1 \text{ df}, p=.10)$$

Note: Data in this table are for Groups B and C in all three terms and for Group A in Terms 1 and 3 only. Only those letters of the alphabet were used in which one or more books were classified by the name of the biographee.

We extended these measures by calculating the Pearson product moment coefficient of correlation (1) for all 338 books in the total sample which were

borrowed in 1978, between the number of such loans and the book numbers of those books ( $r=-.23$ ,  $p=.001$ ), (2) for the 95 books which were borrowed one or more times in the eight months of the study, between the number of their loans in 1978 and their book numbers ( $r=-.21$ ,  $p=.02$ ), and (3) for all 134 books in Groups A, B and C which were borrowed one or more times in 1978, between the number of their loans in 1978 and their book numbers ( $r=-.22$ ,  $p=.005$ ). The negative coefficients indicate that the higher the book number (i.e., the nearer to the end of the alphabet), the lower the 1978 circulation. All three coefficients agree in magnitude, and all are significantly different from zero, but the absolute value of the correlation is low; a coefficient of .23 means that only 5% (.23 squared) of the variation in the dependent variable (i.e., the number of loans in 1978) is explained by the independent variable (the order of the arrangement of these books on the shelves).

The Group A books in the experimental period were arranged on the display shelves randomly and not by the letters of the alphabet. Their circulation and the distribution of the books which were not borrowed at all should therefore be uncorrelated with the alphabet, and this is so. Counting only the letters of the alphabet in which Group A books were found, exactly half of Term 2 loans were in the first 8.5 letters of the alphabet and half were in the second 8.5 letters. Similarly four of the eight books not borrowed at all in Term 2 were in each half of the alphabet. We conclude that alphabetical arrangement of books on the regular shelves had some but not a pervasive effect on their circulation or lack thereof.

#### Sec. 6. Reformulation of the Hypothesis

Public librarians know from practical experience that people will borrow books which are put on display in a good location more often than they will borrow those same books when they are in their regular places on the shelves. This study, and the earlier one on which it was modelled, sought to verify that

this is indeed true under controlled conditions, and (if so) to explore the reason for it. In both studies--despite ten years of time between them, the use of two different groups of titles and the selection of public libraries almost two thousand miles apart in two different countries--the results were the same: statistically significant increases in the circulation of the books put in a prime display location over the circulation of those same books in the pre-experimental period and over the circulation of matching control samples of books in the experimental period. The size of the increases in circulation, and the absence of substantial evidence favoring any of several possible alternative explanations of the phenomenon, support the conclusion that putting adult books in a prime display location in a public library does result in a significant increase in circulation. The problem is how to account for this.

The original hypothesis of both studies specified that the circulation of books put in a display location would increase because of the tendency on the part of adult patrons of public libraries to select the books they borrow not by conscious choice made before they come to the library but by browsing, by looking at random for a "good" book. If this were so, it was hypothesized, then it should follow (1) that any device which facilitated browsing (such as putting books in a prime display location) would lead to increased circulation, (2) that any device or procedure which hindered or discouraged browsing would result in lower circulation, and (3) that any device or activity which had no effect on or connection with browsing would produce no significant change in the circulation of the books in question.

Public librarians have learned from experience that adult patrons like to examine books which have just been returned by other borrowers, and that they tend to prefer new books and new copies of older books, and paperback rather than hardcover books. It was the subjective impression of the present writer that booklists compiled and distributed by public libraries were usually

ignored by patrons and did not lead to increased circulation of the books on the list. If true, this could be explained by the fact that a booklist does not by itself facilitate or discourage browsing and in effect has no necessary or direct connection with browsing. To test this implication of the original hypothesis, in the present study, an additional experimental treatment was added to the use of a prime display location for some books. All titles in a matching group of books were described in a booklist of which a thousand copies were distributed, while all copies of the titles in question were left in their regular places on the open shelves of the library.

It was predicted that the circulation of these booklist books in the experimental period would not be significantly different from their circulation in the pre-experimental period, nor from the circulation of the control group of books in the experimental period. This prediction was false. The booklist books increased their circulation in the experimental period over their own circulation in the pre-experimental period and over the circulation of the control group of books in the experimental period by more than could be explained by chance alone. We assume that people who had copies of the booklist looked for those titles on the shelves and borrowed them, i.e., we failed to think of securing evidence which would tie by name of person the receipt of the booklist and the borrowing of a book on the list; for that matter, we cannot now test whether people who got copies of the booklist were motivated to use it by seeing the display of books of the same kind. This sort of speculation may be resolved if and when a second test of the booklist device is conducted.

Assuming that the results of the booklist part of the present study are not somehow unique to the time and place in question--and this too could be resolved by another test of the booklist experiment--we are left with results which in part support and in part discredit the original hypothesis. What does prime display location of books in a public library have in common with a booklist? We suggest that the answer is that both devices provide readers with a means by

which they can find their way through the relatively large number of books in a public library of almost any size to the books which they like (or think they will like) and therefore borrow. We shall call this the guidance function of both the display technique and the booklist device, and we shall revise our hypothesis to embrace it.

Public librarians have long recognized that "Some people just want a book to read. They are readers with no special, well-defined interest" (21). The Nuneaton (England) Public Library was rearranged to match this view of readers' wants, with a "General Library" of adult fiction and popular non-fiction in the first area a patron came to, and beyond that the "Reference Library" of all other non-fiction and reference books (22). Barlow, the head of this library, suggested that in arranging the books in the General Library, "ignore the classification number, and develop a grouping of books based on reader interest" with fiction and non-fiction together. ". . . the vast majority (of patrons) come into and go out of our libraries without asking the staff for anything. . . They make do with whatever offerings there are on the shelves. Help by the staff is no substitute for an adequate selection of books on the shelves, obviously arranged and displayed obviously" (23).

This brings to mind the reader interest classification of adult books, first suggested by Lowell Martin in 1940 (24) and given extensive trial by the Detroit Public Library and others. Neither the reader interest classification in America nor Barlow's plan (of the physical organization of a public library) in England have had any direct lasting effect, perhaps because both involve relatively large numbers of books in an arrangement still too formal and purposive. Thus, Barlow acknowledged the attraction to readers of books returned to the library by other people, and recommended a "Books Returned" section available for public use: "From the reader's point of view, it is a most convenient method of bringing to his notice a good cross section of the bookstock, and he finds it easier to select a book from the shelves which contain returned books than from the formidable

array of classified books on the ordinary shelves" (25). Barlow pointed out that a public library is not necessarily better for having a larger bookstock but may simply have more dead wood.

Barlow's work was recognized by McClellan, who wrote that "Too many books, or the consciousness of too many books, puts off numbers of readers;" he expanded the idea of the General Library by comparing it to a bookshop with "a number of constantly changing book displays likely to be of interest to the 'non-purposive' reader" (26). And K. H. Jones has recommended the principle of service in depth (books for non-purposive reading first, and for study second), and comments on the impact on public library users of large numbers of books "their variety and appeal sacrificed to the requirements of order and uniformity" (27). Non-librarians too have spoken in favor of browsing; thus Herbert Gans writes that "non-purposive leisure reading by the middle and low-brow may be socially and individually as useful as the purposive reading which library ideology associates with high-brow fiction" (28).

There is some evidence from empirical studies as to the pervasiveness of non-purposive reading in adult use of the public library. We shall cite only a few, from the last decade. In 1971, a study of 48,500 questionnaire responses from users of 43 agencies of 9 English public libraries found that 85% of all responses (the total is over 100% because of multiple responses) indicated general recreation, leisure, personal activity or hobby interest as the motivation for the current visit to the library. Of all adults who were borrowing books for themselves, 65% were looking for any novel of interest and 49% for any non-fiction book of interest, versus 28% to 32% who were seeking either a specific book, a book by a particular author, or some particular information. The researchers concluded that "most library users have no specific requirement in mind when they visit the library . . . the reader who is basically looking for any good book to read will welcome any display techniques that show him or her at a glance, or with minimum effort, a wide range of books that may be of interest" (29).

Support from another point of view comes from a 1975 study of the Los Angeles County (California) Public Library, which found that none of the 93 branches had more than 10% of all titles owned by the system; but over 98% of all 11,000,000 LACPL loans that year were of books in the local libraries' collections (30). The people using these branches were almost always satisfied with what was at hand, and rarely sought other materials available to them by intra-system loan.

In a 1975 survey of adult patrons in all public service agencies of the Evansville (Indiana) Public Library produced 564 useable responses; 70% said they had come to the library "for leisure reading," 37% for "research" purposes, and 9% for all other reasons (multiple answers possible) (31). In 1978, a survey of almost 1500 adult users of the San Diego (California) Public Library asked for the "one . . . reason for using the library today": 50% checked "leisure or recreation," more than four times the percent who chose the second most popular response (32). One relevant study was found of faculty use of a university library: in 1971 and 1972, 431 responses were received from two random samples of the faculty of Georgia Institute of Technology. Among other things, they were asked how they had learned about a book each had borrowed from the Institute Library in the previous month, and to indicate whether the book borrowed was read and if read of what value or usefulness it was to the respondent. Browsing in the library accounted for 31% of all books borrowed, compared with 26% occasioned by "references in a publication," which was the next most used of the five possible methods. But while 41% of all books discovered by "references in a publication" were judged to be essential, only 18% of those found by browsing were similarly rated--the lowest percentage of any of the five methods (33).

No factual data have been found on the effects of a public library booklist on the circulation of the titles so listed. In one study, 90 older titles were given free public service advertising on cable television in two Illinois communities in 1976, with no significant increase in their circulation over the pre-

experimental period or over the circulation of matching titles in a control library in the experimental period (34).

It appears that non-purposive use of the library, and browsing as a method of selecting books to borrow, are characteristic of a major portion of adult use of the public library. To respond to the needs implied by this phenomenon, librarians will theoretically find most success in those devices or techniques which serve to guide readers through the several thousand adult volumes (found in even many small libraries) to those books which the average adult is likely to find interesting and which he/she will borrow, presumably read, and hopefully enjoy. Putting books in a display location serves this purpose, (possibly) because the collection is informal and non-structured or has minimum structure, and because the books in question have presumptive approval of and recommendation by the librarians; the caption of the displays in both the earlier study and the present study was "Good Books You May Have Missed." As such, the display is accepted by many borrowers as a device for getting directly to a group of interesting books which they can examine fairly quickly and choose some to borrow. The general appeal of biographies presumably accounts for the high percentage of borrowed books which were read and enjoyed; this suggests an experiment in which the books on display are chosen specifically because they are least likely to be of interest to the general reader, e.g., books in science, mathematics, or philosophy, or books which have not circulated well at all and are even labelled as soon to be withdrawn.

The booklist too presumably serves a guidance function by suggesting a group of titles which are seen as recommended by the compiler and by the library, and from which each individual can narrow down to his/her final choice, partly from the descriptive annotations of the titles and partly by examining the books which are available on the shelves. Another future experiment should compare the results (a) of annotated and unannotated booklists, and (b) of booklists whose titles are scattered over the collection vs. those concentrated in a relatively

few shelves (as was true in this case). Would booklists on subjects less popular than biographies (e.g. mathematics, philosophy, or foreign languages) have essentially the same results as were found in this study and would two booklists (or two displays) have the same effect as one or less or more?

In more formal terms, the revised hypothesis is as follows: Whatever serves to guide adult public library readers to a reasonably small collection of ostensibly interesting and worthwhile books will result in a significant increase in the circulation of those books; whatever serves to inhibit such guidance of adult readers will result in a significant decline in the circulation of the books in question; and whatever has no connection with or influence on the guidance of readers will have no appreciable effect on the circulation of the relevant books. The presumed reason for this relationship is that most adult users of the public library have no specific title or class of books in mind when they come to the library, and they need, welcome, and will use any device or technique which is offered or available to them by which they can identify quickly and easily a reasonably small group of books which they assume or believe will be of interest to them.

The test of this revised hypothesis should ideally involve one or more devices other than a booklist or a group of books on display. One might use the reader interest classification or the Barlow-McClellan principle of organization in depth in even a small library--and either would have the added benefit of testing the hypothesized relationship on a macro level. In recent literature there are reports of the use of reader interest classification in a small public library (35) and in the bookmobiles of a large system (36). A noon-hour or evening speaker reviewing titles in a particular subject would constitute a guidance device, but could not compare with a display or a booklist for convenient ease of reference over a period of time.

One might try putting red dot labels on the spines of books in the regular collection as an indication that they are recommended for the general reader.

Or one might set up a shelf at the same location in each aisle or in each main subject area, labelled "Recommended by the Library Staff" or "For the General Reader." Another possibility is to identify all books in a given subject as either (a) elementary and introductory, (b) of intermediate difficulty, or (c) advanced; the Public Library Research Group in England tried this but the librarians themselves could not agree on the assignment of titles to up to six categories (37). Finally, there is the idea of contents notes or annotations on catalog cards, which have been requested by public library users (38) and are known to have been used in some English public libraries (39).

Another approach would involve one or more experiments which might support either (but not both) of two hypotheses - the original browsing hypothesis or the revised guidance hypothesis. Thus the original browsing hypothesis would have predicted that having multiple copies of specified titles in their regular places on the shelves should result in increased circulation per title, because the continued availability of a copy of the title is increased. Multiple copies of such titles add nothing to ( and detract nothing from) the guidance of readers. So if adding multiple copies increases circulation, the browsing hypothesis is supported; if they do not, the guidance hypothesis is indirectly strengthened. A similar study might use new copies of selected older titles. Note that both these two possible studies (using multiple copies and new copies) would be tests of the browsing hypothesis in regard to the regular open shelves, something which has not been examined.

The catalog is presumably more of a guidance than a browsing device. Suppose that we took out the cards for a given group of titles; if their circulation was essentially unchanged, the browsing hypothesis would be supported; if their circulation decreased significantly, the guidance hypothesis would be. Suppose that we added annotations and/or contents notes to the cards for a group of titles; increased circulation would favor guidance, while unchanged rates of circulation would favor browsing.

At least one main distinction between the two theories is that the guidance hypothesis encompasses a fairly definite recommendation of the titles in question by the library (or by other readers, as in the case of returned books), while the browsing hypothesis does not. Does this explain why public library lists of new accessions (are thought to) have little effect on the circulation of many of the titles - because the recommendation is too faint? Suppose somehow we could have a display of books which were labelled as "not recommended" (negative guidance in effect); if those books increase in circulation, it would support the browsing hypothesis; if they did not, it would support the guidance hypothesis.

FOOTNOTES

(1) Herbert Goldhor, "The Effect of Prime Display Location on Public Library Circulation of Selected Adult Titles," Library Quarterly 42 (1972) p. 371.

(2) This study was done while the author was serving as Visiting Professor on the staff of the Department of Library Studies, of the University of the West Indies, Kingston. He acknowledges with thanks the support of the Department (Daphne Douglas, Head) for this research, and also the cooperation of the Jamaica Library Service (Leila Thomas, Director) and of the Kingston and St. Andrew Parish Library (Barbara Chevannes, Acting Principal Librarian, and Mabel Marsh, in charge of adult lending services at the main library). Diana Shadeed was an effective research assistant in Jamaica, as were Susan Bonzi and Laura Appelbaum at Urbana. Financial support was also received from the University of Illinois Urbana Campus Research Board.

(3) Jamaica Library Service, Statistical Report: 1977/78 (Kingston, 1978), p. 1, 5; and Joyce L. Robinson, "Jamaica, Libraries in," in Encyclopedia of Library and Information Science (Dekker, 1975) v. 13, p. 169-205, especially p. 185-86.

(4) On April 2, 1978, a count was taken of all books on the shelves, in circulation, at the bindery, etc., in all agencies of the Parish Library; the result was a total of 157,971 volumes or over 40,000 (21%) fewer than were recorded on March 31. The only figures available for KSAPL alone were for adult lending and juvenile lending sub-totals, and reflecting additions and withdrawals up to Dec. 1978. These latter have been used, and further breakdowns and extrapolations made for the main Dewey classes and for reference books. The result is an estimated total of 100,905 volumes in KSAPL as of Dec. 1978, equal to 63.9% of

the Parish Library system total on April 2, 1978. As of March 31, KSAPL was credited with 64.8% of all books in the Parish Library system. See Jamaica Library Service, Statistical Report: 1977/78 (Kingston, 1978) p. 2, 5; and Joyce L. Robinson, "Jamaica, Libraries in," in Encyclopedia of Library and Information Science (Dekker, 1975) v. 13, p. 183. The figures for circulation which are used here differ slightly from those officially reported, and are based on verification by the present author of the arithmetic involved in the daily, monthly and annual totals; see Herbert Goldhor, "Analysis of the Daily Circulation Data for 1977/78 of the Kingston and St. Andrew Parish Library" (unpublished report, 1978) 25 p.

(5) This estimate of 20 loans per book rebound or with a missing date due slip was confirmed in two ways. We counted the number of loans recorded for the other books in the total sample, divided the sum of those loans by the number of years the books had been available for circulation, and the result was 2.34 loans per year. We counted the number of years for which circulation data were lacking for rebound books and those with missing date due slips, divided by the number of such books, and the result was 10.17 years on the average. The result of multiplying 2.34 loans by 10.17 years is 23.8 loans missed on the average. The second check came from examining a group of 24 comparable books in KSAPL waiting to go to bindery in April 1979; they had an average of 1.3 date due slips each and of 22.4 recorded loans each.

(6) The adult lending department of KSAPL was a large room on the second floor, 53' wide and 101' from the head of the stairs to the end of the regular bookshelves which were at right angle to the walls and 3 or 4 sections in length (non-fiction on the left and fiction on the right of a central aisle). Just beyond the circulation desk (which was near the stairs) on the right-hand side of the room was an open area with some easy chairs; on the two sections of shelving which faced the entrance and were next to the central aisle, the staff

had long kept a variety of new books with the caption, "Pick of the Crop." These shelves were used for the books in Group A, for three months. From the right-hand rear corner of the circulation desk to the display shelves was 43' across an open floor.

(7) Herbert Goldhor, "Analysis of the Daily Circulation Data for 1977/78 of the Kingston and St. Andrew Parish Library" (unpublished MS, 1978) p. 12; plus the regular monthly report of circulation for April 1978.

(8) Michael K. Buckland, "On Types of Search and the Allocation of Library Resources," Journal of the American Society for Information Science 30 (May 1979) p. 144.

(9) Michael K. Buckland and Anthony Hindle, "Acquisitions, Growth, and Performance Control through Systems Analysis," in Daniel Gore, ed., Farewell to Alexandria (Greenwood Press, 1976) p. 46.

(10) The two tests of significance most often employed in this study are chi-square and analysis of variance; both were usually calculated by the computer program SPSS, using Cross-Tabs and MANOVA. When chi-square was calculated by hand, formula 6.4 on p. 107 of Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (McGraw-Hill, 1956), was used for 4-cell situations, and formula 6.3 (on p. 104) for tables of more than four cells. When the Kolmogorov-Smirnov test was used with ordinal data in large enough samples, the result was converted to chi-square with two degrees of freedom; see Sigel, p. 131.

(11) Herbert Goldhor, "Analysis of an Inductive Method of Evaluating the Book Collection of a Public Library," Libri 23 (1973) p. 6-17.

(12) For a full description of the methodology and of the results of this application of the inductive method, see Herbert Goldhor, "Evaluation of a Sample of Adult Books in the Kingston and St. Andrew Parish Library of Jamaica" (unpublished MS, 1980).

(13) This is to be read as follows: the calculated value of chi-square in this instance was 3.18, with two degrees of freedom, and the probability of

a chi-square this high or higher occurring by chance alone in repeated similar trials is 20%.

(14) 14% of our completed questionnaires were mailed to us by the respondents; we deducted 5 days for the mail and for delay in completing the form. The resulting average number of days those books were kept out was 32 compared with the average of 29 for those books whose completed questionnaires we picked up daily at KSAPL.

(15) See Goldhor, "The Effect of Prime Display Location . . . ," op. cit., p. 382. In a study of 48,500 questionnaires completed by users of 43 agencies of 9 public libraries in England in 1971, 11% said that they had gone to the library on behalf of someone else; Great Britain Department of Education and Science, Public Libraries and Their Use: A Research Report on the Use of Public Library Buildings with Implications for Their Distribution, Location and Design (Library Information Series, no. 4; HMSO, 1973) p. 19.

(16) Herbert Goldhor, "Some Measures of Adult Use of Public Library Books" Illinois Libraries 62 (Oct. 1980) p. 641-43. In a 1971/72 study of 431 books borrowed by a random sample of faculty, from the Georgia Institute of Technology Library, a maximum of 21 or 5% were reported by the borrowers as not read within a month; see Robert J. Greene, "The Effectiveness of Browsing," College and Research Libraries 38 (July 1977) p. 315.

(17) W. Allen Wallis and Harry V. Roberts, Statistics: A New Approach (Glencoe, IL: The Free Press, 1956) p. 572-75.

(18) Summarized in F. W. Lancaster, The Measurement and Evaluation of Library Services (Information Resources Press, 1977) p. 343-49.

(19) It is worth noting that the 19 titles with more than one copy each were found listed in an average of 5.1 book evaluation tools, while the 96 single-copy titles were found in an average of only 3.9. The comparable figures for Group A are 7 multi-copy titles in an average of 6.7 tools vs. 48 single-copy titles in 3.8; for Group B, 8 in 4.5 vs. 22 in 3.5; and for Group C,

4 in 6.0 vs. 26 in 3.8. When the Kingston and St. Andrew Parish Library got extra copies of titles in this sample, they did so for titles of better than average quality. In one earlier study, using this inductive method of book collection evaluation, the same result was found (Goldhor, "Are the Best Books the Most Read?," op. cit.); in another study, it was not found (Goldhor, "US Public Library Adult Non-Fiction Book Collections in the Humanities," Collection Management 3 (Spring 1979) p. 40).

(20) That is, (1) the books not borrowed in Terms 1 or 3 and not borrowed in Term 2, (2) the books borrowed in Term 1 or Term 3 and also in Term 2, and (3) the books borrowed in Term 1 or Term 3 and not borrowed in Term 2.

(21) S. H. Barlow, "A New Look at an Old Library," Library Association Record 63 (1961) p. 411.

(22) Ibid.; and S. H. Barlow, "Nuneaton's New Library," Library World 65 (July 1963) p. 3-8.

(23) Barlow, "A New Look . . .," p. 413.

(24) Lowell Martin, "Outline of Experimentation in the South Chicago Branch Library" (unpublished MS; Chicago Public Library, 1940) p. 16-19.

(25) Barlow, "A New Look . . .," p. 412.

(26) A. W. McClellan, The Reader, the Library and the Book (Bingley, 1973) p. 31-32, p. 39, 41.

(27) K. H. Jones, "Towards a Re-Interpretation of Public Library Purpose," New Library World 73 (Sept. 1971) p. 76-79, 82; reprinted in Barry Totterdell, ed., Public Library Purpose: A Reader (Bingley, 1978) p. 124, 132-33.

(28) Herbert J. Gans, "Supplier-Oriented and User-Oriented Planning for the Public Library," in his People and Plans: Essays on Urban Problems and Solutions (Basic Books, 1968) p. 101; reprinted in Totterdell, op. cit., p. 77.

(29) Great Britain Department of Education and Science, Public Libraries and Their Use (Library Information Series, no. 4; HMSO, 1973), p. 19, 21-22, 62.

(30) Mary L. Fischer, "The Flexibly Automated Catalog: Budgets, Services, and the Varied Catalogs at the Los Angeles County Public Library," in Daniel Gore, et al., eds., Requiem for the Card Catalog: Management Issues in Automated Cataloging (New Directions in Librarianship no. 2; Greenwood Press, 1979) p. 84, 91.

(31) Evansville (Indiana) Public Library, Annual Report: 1975, p. 8, and Staff News Bulletin (Aug. 1, 1975) p. 80.

(32) San Diego City Financial Management Department, "Productivity Improvement Project: San Diego Public Library" (Unpublished Report no. 78-548: Feb. 1979) p. 53.

(33) Robert J. Greene, "The Effectiveness of Browsing," College and Research Libraries 38 (July 1977) p. 313-16.

(34) Lawrence W. S. Auld, "The Effect on Public Library Circulation of Advertising via Cable Television" (Unpublished doctoral thesis, University of Illinois Graduate School of Library Science, 1978) 214 p.

(35) Lee Hubbard, "Libraries for an Age of Exploration (a Reader Interest Approach), Unabashed Librarian no. 3 (Spring 1972) p. 26-29. The Winchester (VA) Public Library of 39,000 volumes was substantially so organized with a 40% increase in adult non-fiction circulation. Included here is a 20-item bibliography on reader interest classification.

(36) Paul Little, "The Effectiveness of Paperbacks," Library Journal 104 (Nov. 15, 1979) p. 2415-16. The five bookmobiles of the Metropolitan Library System (Oklahoma City, OK) had from 4000-6000 volumes each, mostly uncataloged paperbacks, arranged in 20-26 broad subject groups or "reader interest browsing categories."

(37) Arther Jones and Gorden Pratt, "The Categorization of Adult Non-Fiction," Journal of Librarianship 6 (April 1974) p. 91-98.

(38) Arthur Maltby, UK Catalogue Use Survey (LA, 1973) p. 16; and Arthur Maltby and Alan Duxbury, "Description and Annotation in Catalogues: Reader Requirements," New Library World 73 (April 1972) p. 260-62.

(39) Philip Ward, "Annotation in Public Library Catalogues: British Practice and Policy," Library Association Record 64 (June 1962) p. 208-12. Of 58 English public libraries which responded to a mail questionnaire sent to a non-random sample, 31 (53%) were using annotations on catalog cards (10 of these used only those annotations available in the British National Bibliography).

# Appendix 1. List of Titles.

This is a complete list of all the titles used in this study, arranged first by group, then alphabetically by the last name of the author. For each entry there is given the name of the author, the title, the publisher, the date of publication, the number of pages, the number of copies (or parts or volumes), the number of tools in which the title was found, and the number of loans which occurred in Term 1, in Term 2, and in Term 3.

Group A (the books which were put on special display in the experimental period)

1. Agehananda, Bharati. The Ochre Robe, Allen & Unwin, 1961, 294 p., 1 copy, 3 tools, 0, 0, 0.
2. Arendt, Hannah. Rachel Varnhagen: The Life of a Jewess, East & West Library, 1957, 222 p., 1 copy, 0 tools, 0, 1, 0.
3. Bello, Ahmadu. My Life, Cambridge University Press, 1962, 245 p., 1 copy, 6 tools, 0, 2, 0.
4. Bramwell-Booth, Catherine. Catherine Booth: The Story of Her Loves, Hodder & Stoughton, 1971, 477 p., 1 copy, 1 tool, 0, 2, 1.
5. Brown, Beatrice C. Isabel Fry: 1869-1958; Portrait of a Great Teacher, Barker, 1960, 166 p., 1 copy, 2 tools, 0, 0, 0.
6. Buchan, Anna. Unforgettable, Unforgotten, Hodder & Stoughton, 1957, 247 p., 1 copy, 1 tool, 2, 3, 1.
7. Cameron, James. Point of Departure: Experiment in Biography, Arthur Barker, 1967, 318 p., 3 copies, 5 tools, 1, 6, 1.
8. Caplan, Jack. From Gorbals to Jungle, Maclellan, 1960, 237 p., 1 copy, 0 tools, 0, 3, 1.
9. Cecil, David. Melbourne: The Young Melbourne and Lord M, Reprint Society/Constable, 1955/1954/1939, 394 p./347 p./277 p., 5 copies, 12 tools, 1, 9, 2.
10. Cole, Margaret I., ed. Beatrice Webb's Diaries: 1912-1924, Longmans, 1952, 272 p., 1 copy, 6 tools, 0, 2, 0.
11. Falk, Bernard. The Way of the Montagues: A Gallery of Family Portraits, Hutchinson, 1947, 304 p., 1 copy, 2 tools, 0, 2, 0.
12. Felicity, Sister. Spring Comes Barefoot, Darton, Longman & Todd, 1965, 182 p., 1 copy, 0 tools, 0, 2, 1.
13. Felton, Monica. I Meet Rajaji, Macmillan, 1962, 193 p., 1 copy, 0 tools, 0, 2, 0.
14. Freeman, Douglas S. George Washington: A Biography; vol. 1 Young Washington, Eyre & Spottiswoode, 1948, 549 p., 1 copy, 11 tools, 0, 1, 0.
15. Garvin, James L. The Life of Joseph Chamberlain: vol. 2 1885-1895, Macmillan, 1933, 644 p., 1 copy, 6 tools, 0, 0, 0.
16. Gide, Andre. So Be It, or the Chips Are Down, Chatto & Windus, 1960, 165 p., 1 copy, 7 tools, 0, 1, 0.
17. Hanson, Lawrence. Mortal Victory: A Biography of Paul Cezanne, Holt, Rinehart & Winston, 1959, 245 p., 1 copy, 2 tools, 0, 2, 0.
18. Harding, Bertita. Concerto: The Story of Clara Schumann, Harrap, 1962, 288 p., 1 copy, 4 tools, 0, 1, 0.
19. Harding, Bertita. Phantom Crown: The Story of Maximilian and Carlota of Mexico, Blue Ribbon Books, 1939, 381 p., 1 copy, 6 tools, 1, 2, 1.

20. Hart, Moss. Act One: An Autobiography, Random House/Secker & Warburg, 1959/1960, 444 p., 2 copies, 10 tools, 2, 3, 1.
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120. Morton, Frederic. The Rothschilds: A Family Portrait, Secker & Warburg/Atheneum, 1962/1963, 264 p./305 p., 3 copies, 8 tools.
121. Motley, Mary. Morning Glory, Longmans, 1961, 315 p., 1 copy, 4 tools.
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123. Murry, Colin. One Hand Clapping: A Memoir of Childhood, Gollancz, 1975, 208 p., 1 copy, 2 tools.
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125. Oldenbourg, Zoe. Catherine the Great, Heinemann, 1965, 311 p., 2 copies, 7 tools.
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133. Powell, Adam C., Jr. Adam by Adam, Dial Press, 1971, 260 p., 2 copies, 1 tool.
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136. Randall, James G. Lincoln the President: V. 2 - Bull Run to Gettysburg, Dodd Mead, 1956, 439 p., 1 copy, 7 tools.
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138. Renoir, Jean. Renoir: My Father, Collins, 1962/1964, 416 p., 4 copies, 9 tools.
139. Rockefeller, John W. The Poor Rockefellers, Vanguard Press, 1962, 316 p., 1 copy, 2 tools.
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141. Rowe, Basil L. Under My Wings, Allen, 1957, 223 p., 1 copy, 2 tools.
142. Sadleir, Michael. Trollope: A Commentary, Constable, 1945/1947, 435 p., 2 copies, 8 tools.
143. Sanders, George. Memoirs of a Professional Cad, Putnam, 1960, 192 p., 1 copy, 4 tools.
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146. Singleton-Gates, Peter. General Lord Freyberg VC: An Unofficial Biography, Joseph, 1963, 328 p., 1 copy, 1 tool.
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148. Smith, Constance B. Amy Johnson, Collins, 1967, 384 p., 1 copy, 2 tools.
149. Spanier, Ginette. It Isn't All Mink, Collins, 1959, 236 p., 1 copy, 3 tools.
150. Spring, Marion H. Howard, Collins, 1967, 191 p., 1 copy, 1 tool.
151. Steele, Joseph H. Ingrid Bergman: An Intimate Portrait, Allen, 1960, 368 p., 1 copy, 0 tools.
152. Toye, Francis. For What We Have Received: An Autobiography, Heinemann, 1950, 256 p., 1 copy, 5 tools.
153. Ward, David. King of the Lags: The Story of Charles Peace, Elek Books, 1963, 176 p., 1 copy, 3 tools.
154. Watson-Watt, Robert. Three Steps to Victory: A Personal Account by Radar's Greatest Pioneer, Odhams Press, 1957, 480 p., 1 copy, 4 tools.
155. Waugh, Alec. The Early Years of Alec Waugh, Cassell, 1962, 312 p., 2 copies, 8 tools.
156. Whalen, Richard J. The Founding Father: The Story of Joseph P. Kennedy, Hutchinson, 1965, 541 p., 1 copy, 6 tools.
157. Wilhelmina, Princess, of the Netherlands. Lonely But Not Alone, Hutchinson, 1960, 248 p., 1 copy, 5 tools.
158. Winkler, John K. William Randolph Hearst: A New Appraisal, Hastings House, 1955, 325 p., 1 copy, 3 tools.
159. Wright, Constance. Madame de LaFayette, Holt, Rinehart & Winston, 1962, 280 p., 1 copy, 3 tools.
160. Zamoyska, P. Arch Intriguer: A Biography of Dorothea de Lieven, Heinemann, 1957, 261 p., 1 copy, 1 tool.

Will you please answer the few questions below on your use of this book, to help the Library improve its service to the public. The information you provide will be analyzed by the Department of Library Studies of the U.W.I.; and you are assured that in no report will you ever be identified individually.

Barbara E. Chevannes  
Kingston & St. Andrew Parish  
Library

Author of the book you returned: \_\_\_\_\_

Title of the book: \_\_\_\_\_

1. Did you borrow this book for yourself? Yes \_\_\_\_\_; No \_\_\_\_\_. If "No" please take this form to the person for whom the book was borrowed, and ask him/her to fill it out.

2. How much of the book did you read? None \_\_\_\_\_; Less than half \_\_\_\_\_; More than half \_\_\_\_\_; All \_\_\_\_\_.

3. Are you glad now that you had chosen this book to read? Yes \_\_\_\_\_; No \_\_\_\_\_.

4. When you came to the Library on your previous visit, did you know in advance what book or what kind of book you wished to borrow? Yes \_\_\_\_\_; No \_\_\_\_\_.

4a. If "Yes", where or how did you get the idea of reading it? School-assignment \_\_\_\_\_; Recommendation of a friend \_\_\_\_\_; A booklist \_\_\_\_\_; A book review in a newspaper or magazine \_\_\_\_\_; Other (specify) \_\_\_\_\_.

4b. If "No", what led you to select this book? A booklist \_\_\_\_\_; Advice of a friend \_\_\_\_\_; or of a librarian \_\_\_\_\_; Browsing \_\_\_\_\_; The card catalog \_\_\_\_\_; Other (specify) \_\_\_\_\_.

5. What is your main present occupation or type of work? \_\_\_\_\_.

6. Are you a male \_\_\_\_\_; or a female \_\_\_\_\_?

(Please put the completed form in the box at the loan desk of the Kingston and St. Andrew Parish Library, 2 Tom Redcam Drive, Kingston).

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#### Appendix 4. Some Right and Wrong Decisions Made in the Course of This Study.

##### A. Some Right Decisions

1. The analysis of the data was facilitated and enriched (a) by doing two experiments at one time (i.e., the prime display and the booklist books experiment), (b) by linking the study of these experiments with the parallel study of the quality of the larger sample of books, (c) by recording all available (and not just the obviously relevant) variables of the books, their loans in the eight months, and the questionnaires, and thus being able to use them later as such and in cross-analysis, and (d) by being able to compare the results of this study with the earlier comparable study on prime display.

2. Some error checks were made in coding the data, in key-punching them, in checking titles in tools, and in performing calculations by computer and by hand. Such checks should be done whenever possible, and the results recorded.

##### B. Some Wrong Decisions, or Errors of Omission or Commission.

1. The name of each borrower should have been recorded (as was done in the 1970 study in Champaign-Urbana), so as to be able (a) to detect renewals and also repeated and/or multiple borrowings and questionnaire returns by the same person, (b) to ascertain whether people who borrowed display books also borrowed the booklist books and/or control group books, and whether they also borrowed biographies in the pre-experimental period. Ideally we should have done something so as to be able to connect the names of people who got copies of the booklist (e.g., by distributing the booklists by mail, or by rigorously giving a copy to every adult who borrowed books on given days and whose ticket was therefore left at the library on those days), with those who borrowed booklist books.

2. It would have been very desirable to have gotten questionnaires from more of the borrowers than we did, e.g., analysis of data could have been done in more detail and with more confidence. Perhaps a copy of the questionnaire could have been put in each marked book when it was borrowed; ideally someone on the research team should have been at the circulation desk to see to it that every person returning a marked book was given a questionnaire and, insofar as possible, that he/she completed it then and there. In the 1970 study in Champaign-Urbana, 719 questionnaires were received, for 61% of the 1186 loans; in the present study, 97 questionnaires for 43% of the 223 loans.

3. The idea of continuing to monitor the use of the marked books beyond the end of the experimental period was good, but the decision to stop requesting questionnaires of persons returning those books was a mistake.

4. Early in the study consideration was given to the idea of books being somehow of a "public library-type" or not, but nothing was done to record even a subjective opinion as to whether each book was of a popular nature or more nearly scholarly, let alone any more detailed observations.

5. The questionnaire for borrowers should have been pre-tested on some real patrons; instead it was reviewed only by two members of the library staff.

Appendix 5. Note to Report on "Prime Display Location."

The 110 titles were divided into three groups, viz., X (those with no loans in the Champaign Public Library in either 6-month period; consisting of 8 fiction and 23 non-fiction titles), Y (those with twice as many or fewer - but some - loans in the second 6 months as in the first, in the Champaign Public Library; consisting of 21 fiction and 14 non-fiction titles), and Z (those with more than twice as many loans in the second 6 months as in the first, in the Champaign Public Library; consisting of 26 fiction and 18 non-fiction titles). The 26 fiction titles in Group Z had 195 more loans in the second 6 months than in the first, which was 92% of the total increase in fiction circulation. The 18 non-fiction titles in Group Z had 35 more loans in the second 6 months than in the first, which was 72% of the total increase in non-fiction circulation.

These three groups of titles were compared on several different bases to see which if any were associated with (and therefore might have caused or helped to cause) the lack of circulation of Group X titles and the greatly increased circulation of Group Z titles. Since four of the seven bases of comparison involve nominal data, all the comparisons were made by using chi-square, following Cochran's recommendations for expected frequencies (1), except as noted. In none of the comparisons involving interval data was any significant difference found. Table A summarizes the comparisons, the calculations and the results.

Of the 45 possible comparisons, 40 (89%) have differences which are no greater than can be expected from random error in sampling variations. Four comparisons (9%) have differences which are significant at the 5% level at least. One comparison (2%), no. 13, cannot be calculated by chi-square because all the expected values will be less than 5; by the same token it is unlikely that the

differences found are significant. Of the four significant comparisons, two are in Section A (including the two which are significant at the 1% level), one is in Section D but is questionable because one-third of all expected values are less than 5, and one is in Section N. Both in D and N, Group Y has a higher percentage than does Group Z. Apparently the one thing which clearly separates these groups of books is the percentage of fiction; the higher the percentage of fiction, the more likely it is that that group of books will circulate well.

Of 30 possible comparisons between Group X on the one hand and either Y and Z separately or together, X is the lowest (-er) in 21 (70%). And of 30 other possible comparisons between Group Z on the one hand and either X and Y separately or together, Z is the highest (-er) in only 9 (30%). It would appear that we can better specify what will not circulate than we can say what will circulate heavily.

In summary, only one of these various bases of comparison (i.e., fiction) has any clear association with the distribution of these titles by the level of increase in their circulation. In other words, books which have been best sellers, have been made into films, have relatively few pages, or are fairly recent publications had no more increase in their circulation in this experiment than did their opposites. We can then rule out these factors as possible explanations for the marked increase in circulation of the Group Z titles and for the lack of circulation of the Group X titles.

(1) Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (McGraw-Hill, 1956) p. 110.

Table A. Chi-Square Test Results of Comparisons Between  
Groups of Titles Characterized by Level of Increase in Circulation.

A. Number of Fiction Titles

|        |           |              |            |                    |          |    |
|--------|-----------|--------------|------------|--------------------|----------|----|
| 1. X   | 8 (26%),  | Y 21 (60%),  | Z 26 (59%) | 2 df, $X^2=10.4$ , | p lt .01 | ## |
| 2. X+Y | 29 (44%), | Z 26 (59%)   |            | 1 df, $X^2=2.44$ , | p mt .10 | ns |
| 3. X   | 8 (26%),  | Y+Z 47 (60%) |            | 1 df, $X^2=8.98$ , | p lt .01 | ## |

B. Number of Best Sellers in Fiction

|        |           |              |           |                    |          |    |
|--------|-----------|--------------|-----------|--------------------|----------|----|
| 4. X   | 2 (25%),  | Y 12 (57%),  | Z 9 (35%) | 2 df, $X^2=4.21$ , | p mt .10 | ns |
| 5. X+Y | 14 (48%), | Z 9 (35%)    |           | 1 df, $X^2=1.85$ , | p mt .10 | ns |
| 6. X   | 2 (25%),  | Y+Z 21 (45%) |           | 1 df, $X^2=0.62$ , | p mt .10 | ns |

C. Number of Best Sellers in Non-Fiction

|        |           |              |           |                    |          |    |
|--------|-----------|--------------|-----------|--------------------|----------|----|
| 7. X   | 4 (17%),  | Y 7 (50%),   | Z 6 (33%) | 2 df, $X^2=5.00$ , | p mt .05 | ns |
| 8. X+Y | 11 (30%), | Z 6 (33%)    |           | 1 df, $X^2=0$ ,    | p mt .99 | ns |
| 9. X   | 4 (17%),  | Y+Z 13 (44%) |           | 1 df, $X^2=2.18$ , | p mt .10 | ns |

D. Number of Fiction Titles from Which Films Were Made

|         |           |              |            |                    |          |       |
|---------|-----------|--------------|------------|--------------------|----------|-------|
| 10. X   | 2 (25%),  | Y 16 (76%),  | Z 11 (42%) | 2 df, $X^2=8.16$ , | p lt .02 | # (a) |
| 11. X+Y | 18 (68%), | Z 11 (42%)   |            | 1 df, $X^2=2.63$ , | p mt .10 | ns    |
| 12. X   | 2 (25%),  | Y+Z 27 (58%) |            | 1 df, $X^2=1.47$ , | p mt .10 | ns    |

E. Number of Non-Fiction Titles from Which Films Were Made

|         |          |             |           |                    |          |    |
|---------|----------|-------------|-----------|--------------------|----------|----|
| 13. X   | 2 (9%),  | Y 4 (29%),  | Z 2 (11%) |                    |          | -- |
| 14. X+Y | 6 (16%), | Z 2 (11%)   |           | 1 df, $X^2=0.01$ , | p mt .90 | ns |
| 15. X   | 2 (9%),  | Y+Z 6 (19%) |           | 1 df, $X^2=0.02$ , | p mt .80 | ns |

F. Number of Fiction Titles with Fewer Than the Median Number of Pages

|         |           |              |            |                     |          |        |
|---------|-----------|--------------|------------|---------------------|----------|--------|
| 16. X   | 2 (25%),  | Y 11 (52%),  | Z 14 (54%) | 2 df, $X^2=2.35$ ,  | p mt .30 | ns (a) |
| 17. X+Y | 13 (45%), | Z 14 (54%)   |            | 1 df, $X^2=0.30$ ,  | p mt .10 | ns     |
| 18. X   | 2 (25%),  | Y+Z 25 (53%) |            | 1 df, $X^2=0.004$ , | p = .95  | ns     |

G. Number of Fiction Titles in the Lowest Quartile of the Number of Pages

|         |          |              |           |                    |          |    |
|---------|----------|--------------|-----------|--------------------|----------|----|
| 19. X   | 0,       | Y 6 (29%),   | Z 7 (27%) | 2 df, $X^2=3.30$ , | p mt .10 | ns |
| 20. X+Y | 6 (21%), | Z 7 (27%)    |           | 1 df, $X^2=0.30$ , | p mt .10 | ns |
| 21. X   | 0,       | Y+Z 13 (28%) |           | 1 df, $X^2=1.59$ , | p mt .20 | ns |

H. Number of Non-Fiction Titles with Fewer Than the Median Number of Pages

|         |           |              |           |                    |          |    |
|---------|-----------|--------------|-----------|--------------------|----------|----|
| 22. X   | 12 (52%), | Y 6 (43%),   | Z 9 (50%) | 2 df, $X^2=0.45$ , | p mt .95 | ns |
| 23. X+Y | 18 (49%), | Z 9 (50%)    |           | 1 df, $X^2=0$ ,    | p mt .99 | ns |
| 24. X   | 12 (52%), | Y+Z 15 (47%) |           | 1 df, $X^2=0.29$ , | p mt .10 | ns |

I. Number of Non-Fiction Titles in the Lowest Quartile of the Number of Pages

|         |           |              |           |                    |          |    |
|---------|-----------|--------------|-----------|--------------------|----------|----|
| 25. X   | 5 (22%),  | Y 6 (43%),   | Z 5 (28%) | 2 df, $X^2=2.22$ , | p mt .10 | ns |
| 26. X+Y | 11 (30%), | Z 5 (28%)    |           | 1 df, $X^2=0$ ,    | p mt .99 | ns |
| 27. X   | 5 (22%),  | Y+Z 11 (34%) |           | 1 df, $X^2=1.43$ , | p mt .10 | ns |

Table A (continued)

J. Number of Fiction Titles Whose Date of Original Publication Is More Recent Than the Median

|         |                                 |                 |          |        |
|---------|---------------------------------|-----------------|----------|--------|
| 28. X   | 4 (50%), Y 10 (48%), Z 13 (50%) | 2 df, $X^2=0$ , | p mt .99 | ns (a) |
| 29. X+Y | 14 (48%), Z 13 (50%)            | 1 df, $X^2=0$ , | p mt .99 | ns     |
| 30. X   | 4 (50%), Y+Z 23 (49%)           | 1 df, $X^2=0$ , | p mt .99 | ns (a) |

K. Number of Fiction Titles Whose Date of Original Publication Is in the Highest Quartile

|         |                               |                    |          |    |
|---------|-------------------------------|--------------------|----------|----|
| 31. X   | 1 (12%), Y 7 (33%), Z 8 (31%) | 2 df, $X^2=0.81$ , | p mt .95 | ns |
| 32. X+Y | 8 (28%), Z 8 (31%)            | 1 df, $X^2=0$ ,    | p mt .99 | ns |
| 33. X   | 1 (12%), Y+Z 15 (32%)         | 1 df, $X^2=0.47$ , | p mt .80 | ns |

L. Number of Non-Fiction Titles Whose Date of Original Publication Is More Recent Than the Median

|         |                                |                    |          |    |
|---------|--------------------------------|--------------------|----------|----|
| 34. X   | 12 (52%), Y 6 (43%), Z 9 (50%) | 2 df, $X^2=3.13$ , | p mt .10 | ns |
| 35. X+Y | 18 (49%), Z 9 (50%)            | 1 df, $X^2=0$ ,    | p mt .99 | ns |
| 36. X   | 12 (52%), Y+Z 15 (47%)         | 1 df, $X^2=2.98$ , | p mt .05 | ns |

M. Number of Non-Fiction Titles Whose Date of Original Publication Is in the Highest Quartile

|         |                               |                 |          |        |
|---------|-------------------------------|-----------------|----------|--------|
| 37. X   | 5 (22%), Y 3 (21%), Z 4 (22%) | 2 df, $X^2=0$ , | p mt .99 | ns (a) |
| 38. X+Y | 8 (22%), Z 4 (22%)            | 1 df, $X^2=0$ , | p mt .99 | ns (a) |
| 39. X   | 5 (22%), Y+Z 7 (22%)          | 1 df, $X^2=0$ , | p mt .99 | ns     |

N. Number of Fiction Titles with Two or More of Variables B, D, F and J

|         |                                 |                    |          |    |
|---------|---------------------------------|--------------------|----------|----|
| 40. X   | 3 (38%), Y 17 (81%), Z 14 (54%) | 2 df, $X^2=6.01$ , | p lt .05 | #  |
| 41. X+Y | 20 (69%), Z 14 (54%)            | 1 df, $X^2=2.61$ , | p mt .10 | ns |
| 42. X   | 3 (38%), Y+Z 31 (66%)           | 1 df, $X^2=1.28$ , | p mt .20 | ns |

O. Number of Non-Fiction Titles with Two or More of Variables C, E, H and L

|         |                               |                    |          |    |
|---------|-------------------------------|--------------------|----------|----|
| 43. X   | 8 (35%), Y 8 (57%), Z 8 (44%) | 2 df, $X^2=1.88$ , | p mt .10 | ns |
| 44. X+Y | 16 (43%), Z 8 (44%)           | 1 df, $X^2=0$ ,    | p mt .99 | ns |
| 45. X   | 8 (35%), Y+Z 16 (50%)         | 1 df, $X^2=1.22$ , | p mt .10 | ns |

df = degrees of freedom, lt = less than, mt = more than, ns = not significant, # = significant at the .05 level, ## = significant at the .01 level

(a) More than 20% of the expected frequencies are less than 5.

Sources: For B and C, Alice P. Hackett, 60 Years of Best Sellers: 1895-1955 (Bowker, 1956) including lists of titles which have sold over a million copies each.

For D and E, A. G. S. Enser, Filmed Books and Plays: A List of Books and Plays from Which Films Have Been Made, 1928-1967 (Deutsch, 1968).

For F - I, the numbers of pages of up to 10 of the most recent editions in the National Union Catalog were averaged.

For J - M, the date of original publication was found in either E. A. Baker and J. Packman, A Guide to the Best Fiction (3rd ed.; Routledge, 1932) or in Hester R. Hoffman, The Reader's Adviser (10th ed.; Bowker, 1964).